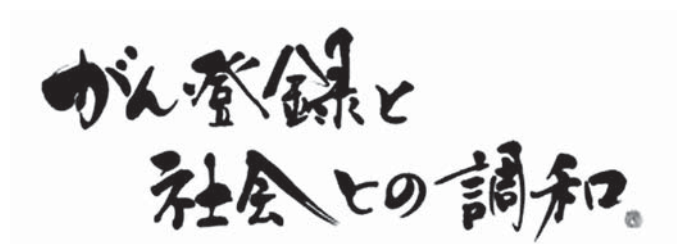


**The 32nd Annual Meeting of
International Association of Cancer Registries**

**Tuesday, October 12 - Thursday, October 14, 2010
Yokohama, Japan**



**Society and Cancer Registration :
Towards Harmonization**

Program and Book of Abstracts



がん登録と
社会との調和。

"Gan Touroku to Shakai Tono Chowa"

"Society and Cancer Registration :
Towards Harmonization"

Chosho Yabe, who performs at the opening ceremony, is an up and coming Japanese calligrapher. Her works have not only an uplifting feeling but have a delicacy of feminine trait and spirit. Her performance is characteristic style, which is accompanied by music. However, calligrapher is Japanese own culture, she gets a good reputation all over the world with her distinctive style.

Welcome to the 32nd Annual Meeting of the IACR

Dear Colleagues,

We are honored to have the opportunity to host the 32nd Annual Meeting of the International Association of Cancer Registries (IACR) and to welcome you to Yokohama, Japan. This is the fifth IACR meeting to be held in Asia and the second in Japan; the first took place in Fukuoka 26 years ago.

Recently, national cancer control programs have been promoted in many countries, and it is widely acknowledged that cancer registration is a pillar of information infrastructure. In Japan, the Cancer Control Act was approved in 2006. Since then, interest in cancer registration has been increasing rapidly among cancer patients, health administrators, and health care professionals. Nevertheless, the general population remains largely unaware of the benefits of cancer registration, and cancer registry data continue to be underutilized. For these reasons, we chose *Society and Cancer Registration—Towards Harmonization* as the main theme for the 32nd Annual Meeting.

During the conference, four plenary sessions and eight keynote lectures are scheduled, and all feature distinguished experts. Due to time constraints, 40 presentations have been selected for the nine oral scientific sessions and 154 presentations will be displayed in the poster sessions.

The harbor city of Yokohama was opened to the world 150 years ago and is a most apposite venue for the fruitful discussion of how we might harmonize our accumulated traditional knowledge with modern cancer registration and cancer control technologies. We trust that this meeting will provide a valuable opportunity for us to encourage both the exchange of the latest information in our field and its dissemination to the public domain.

A handwritten signature in black ink, appearing to read 'Takamasa Kayama', with a long horizontal stroke extending to the right.

Takamasa Kayama, M.D., Ph.D.
Chief Director, National Cancer Center
On behalf of the Local Organizing Committee

Organizing Committee of the 32nd Meeting of IACR

President

Takamasa Kayama (National Cancer Center)

Local Organizing Committee

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Vice-chairperson: Wakiko Ajiki (National Cancer Center)

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Hideo Tanaka (Aichi Cancer Center Research Institute)

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**We sincerely appreciate all the companies and
the organizations for their financial contribution
and technical cooperation.**

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Program at glance

	Oct. 11 (Mon)						Oct. 12 (Tue)		
	Yokohama Kaikou Memorial Museum			Yokohama Red Brick Warehouse No.1			Yokohama Red Brick Warehouse No.1		
	2F Room7	1F Hall	2F Room9	2F Space A/B/C	3F Hall	3F Foyer	2F Space A/B/C	3F Hall	3F Foyer
8:00								Registration	
8:30									
9:00	(Setting up)								
9:30	IACR Executive Board Meeting	Registration					Poster Setting-up	9:00-9:45 Opening Ceremony	
10:00		Pre-Meeting Course 1 Principles of survival analysis; all-cause and relative survival; life tables; analytic design	Canreg5 Training Workshop					9:45-10:05 Plenary Session 1	
10:30								10:05-10:35 Plenary Session 2	
11:00							Scientific Sessions (poster)	10:35-10:55 Coffee Break	
11:30		Coffee Break						10:55-11:25 Plenary Session 3	
12:00		2 Addressing the impact of data quality on cancer survival						11 :25-12 :40 Scientific Session 1 <i>Cancer incidence and mortality (1)</i> O-1-1 ~ O-1-5	
12:30		3 Age-standard isation for time trends and geographical comparison of survival					12:40-13:45 Lunch (Yokohama Red Brick Warehouse No.2)		
13:00		Lunch					13:45-14:30 Poster Viewing 1		
13:30								14:30-14:55 Key Note Lecture	
14:00								14:55-15:55 Scientific Session 2 <i>Quality of cancer care and outcome research (1)</i> O-2-1 ~ O-2-4	
14:30		4 Approaches to modelling and availability of software					Scientific Sessions (poster)		15:55-16:15 Coffee Break
15:00								16:15-16:40 Key Note Lecture	
15:30								16:40-17:55 Scientific Session 3 <i>Cancer incidence and mortality (2)</i> O-1-6 ~ O-1-10	
16:00		Coffee Break					Transition to the restaurant (bus)		
16:30		5 Estimation of "cure" and avoidable premature deaths							
17:00									
17:30		6 International comparisons and policy applications							
18:00									
18:30	(Cleanup)								
19:00	19:00-21:00 Welcome Reception (Bar TUNE, Yokohama Red Brick Warehouse No.2)						19:00-22:00 Fishing Dinner (Zauo, Tsunashima)		
19:30									
20:00									
20:30									
21:00									
21:30									
22:00									

Oct. 13 (Wed)			Oct. 14 (Thu)				
Yokohama Red Brick Warehouse No.1			Yokohama Red Brick Warehouse No.1				
2F Space A/B/C	3F Hall	3F Foyer	2F Space A/B/C	3F Hall	3F Foyer		
	Registration			Registration		8:00	
							8:30
Scientific Sessions (poster)	9:00-9:30 Plenary Session 4		Scientific Sessions (poster)	Scientific Sessions (poster)		9:00-9:25 Key Note Lecture	9:00
	9:30-9:55 Key Note Lecture					9:25-10:25 Scientific Sessions 8 <i>Quality of cancer care and outcome research (2)</i> O-2-5 ~ O-2-8	9:30
	9:55-10:55 Scientific Session 4 <i>Cancer registration for evaluation of risk factors</i> O-4-1 ~ O-4-4					10:00	
		10:25-10:45 Coffee Break			10:30		
		10:55-11:15 Coffee Break		10:45-11:45 Scientific Sessions 9 <i>Cancer incidence and mortality (3)</i> O-1-20 ~ O-1-23		11:00	
	11:15-11:40 Key Note Lecture		(Cleanup)	11:45-12:45 IACR Business Meeting 12:45-13:30 Closing Ceremony		11:30	
11:40-12:40 Scientific Session 5 <i>Cancer survival (1)</i> O-1-11 ~ O-1-14	12:00						
12:40-13:45 Lunch (Yokohama Red Brick Warehouse No.2)		12:30					
		13:00					
13:45-14:30 Poster Viewing 2			13:30- Lunch (Yokohama Red Brick Warehouse No.2)			13:30	
						14:00	
Scientific Sessions (poster)	14:30-14:55 Key Note Lecture		(Cleanup)	15:00-16:15 Asian Cancer Registry Network Meeting		14:30	
	14:55-16:10 Scientific Session 6 <i>Cancer registry methods</i> O-3-1 ~ O-3-5					15:00	
		16:10-16:30 Coffee Break	(Cleanup)	16:45-18:00 Asian Cancer Registry Network Meeting	16:15-16:45 Coffee Break	15:30	
	16:30-16:55 Key Note Lecture	16:00					
	16:55-18:10 Scientific Session 7 <i>Cancer survival (2)</i> O-1-15 ~ O-1-19				16:30		
Transition to the restaurant (on foot)						17:00	
						17:30	
19:00-22:00 Gala Dinner (Attimo, Minatomirai)						18:00	
						18:30	
						19:00	
						19:30	
						20:00	
						20:30	
			21:00				
			21:30				
			22:00				

The IACR Pre-Meeting Course

Cancer survival - practical use of registry data in cancer control

Date: Monday, October 11, 10:00 - 18:30

Place: Yokohama Kaikou Memorial Museum

This workshop will be presented by Professor Michel P. Coleman and Dr. Bernard Rachet from the Cancer Research UK Cancer Survival Group at the London School of Hygiene and Tropical Medicine. The workshop should interest cancer registry personnel involved in various aspects of cancer survival, including data collection, analysis, reporting and policy applications.

The content will be accessible to those who are not statistical specialists.

The workshop will briefly cover the following topics in six one-hour sessions, each including 15 minutes for discussion.

09:30 - 10:00 **Registration**

10:00 - 11:00 **1 Principles of survival analysis: all-cause and relative survival; life tables; analytic design**

Michel Coleman

11:00 - 11:30 *Coffee*

11:30 - 12:30 **2 Addressing the impact of data quality on cancer survival**

Bernard Rachet

12:30 - 13:00 **3 Age-standardisation for time trends and geographical comparison of survival**

Yuri Ito

13:00 - 14:30 *Lunch*

14:30 - 16:00 **4 Approaches to modelling and availability of software**

Bernard Rachet

16:00 - 16:30 *Coffee*

16:30 - 17:30 **5 Estimation of "cure" and avoidable premature deaths**

Michel Coleman

17:30 - 18:30 **6 International comparisons and policy applications**

Michel Coleman

The workshop will not include practical exercises.

* Lunch is provided to all the course participants who registered in advance.

Lecturers

Michel Coleman

Professor of Epidemiology and Vital Statistics,
London School of Hygiene and Tropical Medicine, UK



Dr. Coleman qualified in medicine in Oxford and practised for 6 years in internal medicine, and briefly in general practice, before deserting to epidemiology. He has been Professor of Epidemiology and Vital Statistics at the London School of Hygiene & Tropical Medicine since 1995. He has been Deputy Chief Medical Statistician at the UK Office for National Statistics (1995-2004), and Head of the Cancer and Public Health Unit at the London School (1998-2003). Previously, he worked in the Cancer Epidemiology Unit in Oxford (1984-87), at WHO's International Agency for Research on Cancer in Lyon (1987-1991), and as Medical Director of the Thames Cancer Registry in London (1991-1995).

His research has focussed on time trends and socio-economic inequalities in cancer incidence, mortality and survival, and their application to improve public health policy for cancer control. He led the first worldwide analysis of cancer survival in 2008. He has been active in European cancer policy initiatives, and has been an advisor on cancer policy and research to governments and agencies in Europe and further afield.

He has taught epidemiology in a number of countries. He has been involved in the debates on confidentiality and cancer surveillance for 20 years, both in the UK and internationally.

Bernard Rachet

Clinical Senior Lecturer in Cancer Epidemiology,
London School of Hygiene and Tropical Medicine, UK



Dr. Rachet qualified in medicine in France and worked as a clinician before entering epidemiological research. He completed an MSc in Epidemiology in Paris and a PhD in Epidemiology at the International Agency for Research on Cancer (IARC), Lyon, France. Before joining the London School of Hygiene and Tropical Medicine in July 2002, he spent three years as a postdoctoral fellow in Montreal (Canada), where he mainly worked on cancer risks associated with occupational and environmental exposures, and on developments in methodology.

His current research is centred on cancer survival. As co-principal investigator in a new five-year Cancer Research UK programme grant, he is leading a wide range of projects to quantify, describe and explain patterns and trends in cancer survival by socio-economic group, geographic area and ethnicity, as well as extending the methodology and tools for survival analysis, in collaboration with many research partners in the UK and around the world.

He is involved in various face-to-face courses at the School, both on the Medical Statistics MSc and the Epidemiology MSc, and supervises several doctoral students. As Research Degree Co-ordinator for the Unit, his main role is to ensure high-quality training of research degree students.

Satoshi Honjo

National Hospital Organization, Fukuoka National Hospital, Japan

Yuri Ito

Researcher, Osaka Medical Centre for Cancer and Cardiovascular Diseases,
Japan

Program

I. October 12 (Tue)

Time	Session title	Speaker
9:00-9:25	Opening Ceremony (Greetings) Moderator: Tomotaka Sobue 1) Greeting from the President of IACR 2010 2) Greeting from the Ministry of HLW, Japan 3) Greeting from the Governor of Kanagawa Prefecture	Takamasa Kayama Shigefumi Matsuzawa
9:25-9:45	Opening Performance Japanese traditional "Shodou" exhibition	
9:45-10:05	Plenary Session 1 Moderator: Tomotaka Sobue Society and cancer registration: towards harmonization	Takamasa Kayama
10:05-10:35	Plenary Session 2 Moderator: Takamasa Kayama Cancer research for cancer prevention: opportunities and priorities for cancer registries	Christopher P. Wild
10:35-10:55	Coffee Break	
10:55-11:25	Plenary Session 3 Moderator: Hideaki Tsukuma Cancer information, registries and IARC: a future perspective	David Forman
11:25-12:40	Scientific Session 1: Cancer incidence and mortality (1) Chairpersons: Marion Pineros (Columbia), Keitaro Matsuo (Japan)	O-1-1 ~ O-1-5
12:40-13:45	Lunch time	
13:45-14:30	Poster Viewing 1 Cancer incidence and mortality	
14:30-14:55	Key Note Lecture for Scientific Session 2 Moderators: Lambertus A. Kiemeney, Nobuhiro Saruki Monitoring a cancer control program in Europe and the World: mission impossible without cancer registry	Renée Otter
14:55-15:55	Scientific Session 2: Quality of cancer care and outcome research (1) Chairpersons: Lambertus A. Kiemeney (Netherlands) Nobuhiro Saruki (Japan)	O-2-1 ~ O-2-4
15:55-16:15	Coffee Break	
16:15-16:40	Key Note Lecture for Scientific Session 3 Moderators: Maria Rica Mirasol Lumague, Wakiko Ajiki Radiation and cancer incidence in atomic bomb survivors -Effective use of cancer registry data-	Kazunori Kodama
16:40-17:55	Scientific Session 3: Cancer incidence and mortality (2) Chairpersons: Maria Rica Mirasol Lumague (Phillipine) Wakiko Ajiki (Japan)	O-1-6 ~ O-1-10
19:00-22:00	Fishing Dinner	

II. October 13 (Wed)

Time	Session title	Speaker
9:00-9:30	Plenary Session 4 Moderator: Wangqing Chen Cancer registration in Japan: Current status and future direction	Tomotaka Sobue
9:30-9:55	Key Note Lecture for Scientific Session 4 Moderators: Rajaraman Swaminathan, Masahiro Tanaka Attributable causes of stomach and esophageal in China	You-Lin Qiao
9:55-10:55	Scientific Session 4: Cancer registration for evaluation of risk factors Chairpersons: Rajaraman Swaminathan (India) Masahiro Tanaka (Japan)	O-4-1 ~ O-4-4
10:55-11:15	Coffee Break	
11:15-11:40	Key Note Lecture for Scientific Session 5 Moderators: Betsy Kohler, Hiroaki Katayama Molecular tracing of the global hepatitis C virus epidemic predicts regional patterns of hepatocellular carcinoma mortality	Masashi Mizokami
11:40-12:40	Scientific Session 5: Cancer survival (1) Chairpersons: Betsy Kohler (USA) Hiroaki Katayama (Japan)	O-1-11 ~ O-1-14
12:40-13:45	Lunch Time	
13:45-14:30	Poster Viewing 2 Quality of cancer care and outcome research Cancer registry methods Cancer registration for evaluation of risk factors	
14:30-14:55	Key Note Lecture for Scientific Session 6 Moderators: Hans S. Storm, Akiko Shibata The current and future global cancer burden	Freddie Bray
14:55-16:10	Scientific Session 6: Cancer registry methods Chairpersons: Hans S. Storm (Denmark) Akiko Shibata (Japan)	O-3-1 ~ O-3-5
16:10-16:30	Coffee Break	
16:30-16:55	Key Note Lecture for Scientific Session 7 Moderators: Roberto Zanetti, Akiko Ioka Translating local quality assurance to the global community	Jean-Michel Lutz
16:55-18:10	Scientific Session 7: Cancer survival (2) Chairpersons: Roberto Zanetti (Italy) Akiko Ioka (Japan)	O-1-15 ~ O-1-19
19:00-22:00	Gala Dinner	

III. October 14 (Thu)

Time	Session title	Speaker
9:00-9:25	Key Note Lecture for Scientific Session 8 Moderators: Maria Schymura, Hutchia Sriplung Enhancing cancer registry data for quality-of-care assessment	Joseph Lipscomb
9:25-10:25	Scientific Session 8: Quality of cancer care and outcome research (2) Chairpersons: Maria Schymura (USA) Hutchia Sriplung (Thailand)	O-2-5 ~ O-2-8
10:25-10:45	Coffee Break	
10:45-11:45	Scientific Session 9: Cancer incidence and mortality (3) Chairpersons: Charles Gombe-Mbalawa (Congo) Mei-Shu Lai (Taiwan)	O-1-20 ~ O-1-23
11:45-12:45	IACR Business Meeting	
12:45-13:30	Closing Ceremony Moderator: Tomohiro Matsuda 2010 Poster Award Enrico Anglesio Prize (IACR round) Introduction of 2011 host city Closing remarks	Poster award committee Stefano Rosso, Alberto Anglesio Tomotaka Sobue
13:30-	Lunch Time	

List of Oral Sessions

Session No.	Name of the first author	Title	Country of the first author	Enrico prize candidate	Page
Scientific Session 1					
Cancer incidence and mortality (1) October 12 (Tue) 11:25-12:40					
Chairpersons: Marion Pineros (Columbia) , Keitaro Matsuo (Japan)					
O-1-1	Denggui Wen	An analysis on the incidence and mortality rate of upper gastrointestinal carcinoma from 2000 to 2008 in Shexian China	CHINA		P49
O-1-2	Sonia Fernandez Balbuena	Epidemiological pattern of childhood cancer in Castile and Leon.	SPAIN	x	P50
O-1-3	Eduardo A. Laura	Harmonization of cancer registries in Latin America and the Caribbean region: An important challenge for IACR and other international organizations	ARGENTINA		P51
O-1-4	Dondov Oyunchimeg	Incidence and mortality of common cancers in Mongolia	MONGOLIA		P52
O-1-5	Tadeusz A. Dyba	Predicting cancer incidence and mortality in Finland up to 2020 using simple linear models and Stata macros	FINLAND		P53
Scientific Session 2					
Quality of cancer care and outcomes research (1) October 12 (Tue) 14:55-15:55					
Chairpersons: Lambertus A. Kiemeneij (Netherlands), Nobuhiro Saruki (Japan)					
Key Note Lecture for Scientific Session 2 Renée Otter (Netherlands, IKN) Monitoring a cancer control program in Europe and the World: mission impossible without cancer registry					P54
O-2-1	Otto Visser	Oncomonitor; quality indicators for hospitals based on a population-based cancer registry	NETHERLANDS		P56
O-2-2	Omar F Nimri	Down staging breast cancer among Jordanian females (2005-2008)	JORDAN		P57
O-2-3	Isabelle Soerjomataram	Years in good health among colorectal cancer survivors	NETHERLANDS	x	P58
O-2-4	Anders Berglund	Co-morbidity, treatment, overall and cause-specific survival in prostate cancer - A population-based study in Sweden	SWEDEN		P59

Session No.	Name of the first author	Title	Country of the first author	Enrico prize candidate	Page
Scientific Session 3					
Cancer incidence and mortality (2) October 12 (Tue) 16:40-17:55					
Chairpersons: Maria Rica Mirasol Lumague (Phillipines), Wakiko Ajiki (Japan)					
Key Note Lecture for Scientific Session 3 Kazunori Kodama (Japan, RERF) Radiation and cancer incidence in atomic bomb survivors - Effective use of cancer registry data -					P60
O-1-6	Jasim M A Al-diab	Pattern of solid tumors in basrah and southern Iraq results of histopathological registration 2005-2008	IRAQ		P62
O-1-7	Stefano Rosso	Annual age-specific rates: What they add in our understanding on cancer risks	ITALY		P63
O-1-8	Atul Shrivastava	Trends of mouth and tongue cancers in the population based cancer registry of Bhopal, India	INDIA		P64
O-1-9	Sultan Eser	Invazive and in-situ cervical cancer incidence trends in 1993-2006 in Izmir, Turkey	TURKEY		P65
O-1-10	Suraj N. Perera	Incidence of oesophageal cancers in Sri Lanka: Evidence from Sri Lankan cancer registry 1985 - 2005	SRILANKA		P66
Scientific Session 4					
Cancer registration for evaluation of risk factors October 13 (Wed) 9:55-10:55					
Chairpersons: Rajaraman Swaminathan (India), Masahiro Tanaka (Japan)					
Key Note Lecture for Scientific Session 4 You-lin Qiao (China, Cancer Institute/Hospital Chinese Academy of Medical Sciences) Attributable causes of stomach and esophageal cancer in China - An example of using cancer registry and population exposure data to evaluate cancer risk factors for making national cancer prevention program					P67
O-4-1	Pedro Rizo	Pronostic factors for survival in locally advanced breast cancer at the National Cancer Institute of Mexico 2004 - 2008	MEXICO		P69
O-4-2	Lambertus A. Kiemeney	A bladder cancer genome-wide association study using the cancer registry infrastructure	NETHERLANDS		P70
O-4-3	Isao Oze	Positive association between green tea consumption and risk for upper aerodigestive tract cancer in Japanese population	JAPAN	x	P71
O-4-4	Joo young Lee	Suicidal death among long-term survivors of childhood cancer in Korea	KOREA	x	P72

Session No.	Name of the first author	Title	Country of the first author	Enrico prize candidate	Page
Scientific Session 5					
Cancer survival (1) October 13 (Wed) 11:40-12:40					
Chairpersons: Betsy Kohler (USA) , Hiroaki Katayama (Japan)					
Key Note Lecture for Scientific Session 5 Masashi Mizokami (Japan, Intl. Medical Center) Molecular tracing of the global hepatitis C Cirrus epidemic predicts regional patterns of hepatocellular carcinoma mortality					P73
O-1-11	Arun Pokhrel	Education, survival and avoidable deaths in cancer patients in Finland	FINLAND		P75
O-1-12	Libby Ellis	Socioeconomic inequalities in cancer survival in England after the NHS Cancer Plan	UNITED KINGDOM	x	P76
O-1-13	Adriano V Laudico	Breast cancer incidence, incidence trends, and survival in Metro Manila and Rizal Province, Philippines	PHILIPPINES		P77
O-1-14	M. Carmen Martos	Impact of comorbidity in gastric cancer survival in Zaragoza	SPAIN		P78
Scientific Session 6					
Cancer registry methods October 13 (Wed) 14:55-16:10					
Chairpersons: Hans S. Storm (Denmark), Akiko Shibata (Japan)					
Key Note Lecture for Scientific Session 6 Freddie Bray (France) The current and future global cancer burden					P79
O-3-1	April G Fritz	Updates to ICD-O affecting incidence rates in population-based registries	USA		P81
O-3-2	Ula Nur	Modelling relative survival in the presence of incomplete data: a tutorial	UNITED KINGDOM		P82
O-3-3	Basalama Fatum	Modeling of population-based cancer registry in Jakarta, Indonesia	INDONESIA		P83
O-3-4	Tomoki Nakaya	Geographic disparities of early detection of cancer in Osaka Prefecture, Japan	JAPAN		P84
O-3-5	Sohee Park	Area-based health inequalities in cancer incidence and mortality in Korea: Multi-level modeling approach	KOREA		P85

Session No.	Name of the first author	Title	Country of the first author	Enrico prize candidate	Page
Scientific Session 7					
Cancer survival (2) October 13 (Wed) 16:55-18:10					
Chairpersons: Robert Zanetti (Italy), Akiko Ioka (Japan)					
Key Note Lecture for Scientific Session 7 Jean-Michel Lutz (Switzerland, NICER/ ENCR) Translating local quality assurance to the global community					P86
O-1-15	Rajaraman Swaminathan	Hospital-based long-term survival trend in breast cancer: Chennai, India, 1957-2006	INDIA		P88
O-1-16	Hans H. Storm	Survival of patients diagnosed with cancer in the Nordic countries up to 1999-2003 followed to the end of 2006. A critical overview of the results	DENMARK		P89
O-1-17	Manuela M Quaresma	Survival index for all cancers combined for the Primary Care Trusts in England	UNITED KINGDOM	x	P90
O-1-18	Yuri Ito	Trends in cure fraction for colorectal cancer in Osaka, Japan, between 1975 and 2000	JAPAN	x	P91
O-1-19	Claudia Allemani	The impact of health insurance on cancer survival in the USA	ITALY		P92
Scientific Session 8					
Quality of cancer care and outcome research (2) October 14 (Thu) 9:25-10:25					
Chairpersons: Maria Schymura (USA), Htucha Sriplung (Thailand)					
Key Note Lecture for Scientific Session 8 Joseph Lipscomb (USA, Emory Univ.) Enhancing Cancer Registry Data for Quality-of-Care Assessment					P93
O-2-5	Sabine Siesling	European wide registration of three important cancer indicators: The EUROCHIP project	NETHERLANDS		P95
O-2-6	Vivien W. Chen	Factors contributing to higher mortality among black women with breast cancer in Louisiana	USA		P96
O-2-7	Jean FAIVRE	Patterns of care for European colorectal cancer patients diagnosed 1996-1998: A EUROCARE high resolution study	FRANCE		P97
O-2-8	María Dolores Chirlaque	Is Breast Cancer prognosis highly affected by co-morbidity?	SPAIN		P98
Scientific Session 9					
Cancer incidence and mortality (3) October 14 (Thu) 10:45-11:45					
Chairpersons: Charles Gombe-Mbalawa (Congo), Mei-Shu Lai (Taiwan)					
O-1-20	George Enow-oroock	Cancer trends in Yaounde. Review of 5 years of population cancer registration in Yaounde, Cameroon	CAMEROON		P99
O-1-21	HH Huang	Recurrence patterns for localized renal cell carcinoma after nephrectomy at a single institution-A Registry based review	SINGAPORE		P100
O-1-22	Yasmin Bhurgri	Epidemiology of cancer cervix in Karachi South. Its implications for the future	PAKISTAN		P101
O-1-23	Nontuthuzelo IM Somdyala	Cervical cancer incidence in South Africa within 10 years of mass screening	SOUTH AFRICA		P102

List of Poster Sessions

Session No.	Name of the first author	Title	Country of the first author	Page
Space A				
Cancer monitoring and control planning / General topics and screening				
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Information for Presenting Authors and Chairpersons

Oral Presentations:

Instructions for Chairpersons and Speakers

For Chairpersons

1. All chairpersons are requested to stop by the PC Desk no later than 30 minutes prior to the session to make sure that you are Present. It is also requested that you be seated on Next Chairperson's seat in the Hall, no later than 15 minutes prior to the start of the session.

For Speakers

1. For each speaker, the allocated time of the speech is 10 min, followed by 4 min discussion. All speakers are asked to keep the allocated presentation time.
2. The presentation schedule is as informed by the secretariat prior to the congress. All speakers are asked to keep to the allocated presentation time.
3. Only computer presentations will be provided in the oral sessions. We regret that no slides or OHP may be used.
4. Audio-Visual Materials
 - 1) Please save your data in one of the following media: CD-R or USB memory device, and deliver it to the PC Desk.
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5. The PC Desk will be open during the following hours. Speakers are requested to present their materials at least **45 minutes prior** to their presentation.

PC Desk

Location: In front of the Hall on the 3rd floor

Hours :	October 12 (Tue)	8:30am	–	5:00pm
	October 13 (Wed)	8:30am	–	5:15pm
	October 14 (Thu)	8:30am	–	11:30am

**Poster Presentation:
Instructions for Presenters**

For Presenters

1. All posters will be displayed for 3 days.
Mounting : 9:00am-10:00am, October 12
Exhibition: 10:00am, October 12 - 12:00pm, October 14
Poster Viewing Session : (1) P-1-01 ~ P-1-88 / 1:45pm - 2:30pm, October 12
(2) P-2-01 ~ P-4-23 / 1:45pm - 2:30pm, October 13
Removal : 12:00pm - 2:00pm, October 14
2. Presenters are requested to receive pins for mounting.
3. Presenters are requested to be on standby at the front of your poster panel during the poster viewing session.
4. Poster panels are 90cm wide X 160cm high. Please refer to the diagram, and use big fonts for easy reading. 20cm X 70cm in width of the upper part of the panel is to be used for labeling your poster title, affiliation and the authors' names.
5. Any posters remaining on panels after the removal time will be discarded by the secretariat.

Awards



Enrico Anglesio Prize

At the IACR 2010, we establish a new prize for a talented young epidemiologist. The Fondo Anglesio Moroni offers the Enrico Anglesio Prize for the IACR's annual scientific meeting. All who meet the criteria below have a chance at the award!

1. Awarded to a young epidemiologist (UNDER 35 yrs of age) for his/her ORAL presentation
2. Communication ability evaluated, beside scientific quality
3. The amount of the prize (500 Euro) is tripled (to 1500) if (and when) the winner publishes the work in a peer-reviewed journal with impact factor (within two years)

Candidates:

Scientific session 1 Cancer incidence and mortality 1 October 12 (Tue) 11:25-12:40

O-1-2 Sonia Fernandez Balbuena SPAIN
Epidemiological pattern of childhood cancer in Castile and Leon

Scientific session 2 Quality of cancer care and outcomes research 1 October 12 (Tue) 14:55-15:55

O-2-3 Isabelle Soerjomataram NETHERLANDS
Years in good health among colorectal cancer survivors

Scientific session 4 Cancer registration for evaluation of risk factors October 13 (Wed) 9:55-10:55

O-4-3 Isao Oze JAPAN
Positive association between green tea consumption and risk for upper aerodigestive tract cancer in Japanese population

O-4-4 Joo young Lee KOREA
Suicidal death among long-term survivors of childhood cancer in Korea: National Cancer Registry study

Scientific session 5 Cancer survival 1 October 13 (Wed) 11:40-12:40

O-1-12 Libby Ellis UNITED KINGDOM
Socioeconomic inequalities in cancer survival in England after the NHS Cancer Plan

Scientific session 7 Cancer survival 2 October 13 (Wed) 16:55-18:10

O-1-17 Manuela M Quaresma UNITED KINGDOM
Survival index for all cancers combined for the Primary Care Trusts in England

O-1-18 Yuri Ito JAPAN
Trends in cure fraction for colorectal cancer in Osaka, Japan, between 1975 and 2000

Juries of Enrico Anglesio Prize



Stefano Rosso
(President, Italy)



Sabine Siesling
(The Netherlands)



Hans H. Storm
(Denmark)



Hideo Tanaka
(Japan)



Hideaki Tsukuma
(Japan)

IACR Poster Award

At the IACR 2010, more than 150 poster presentations will be given. IACR poster prize will be awarded to participants in the poster sessions. Scientific quality as well as communication ability is evaluated by the IACR board members. All presenters of the poster sessions will be candidates.

Venues

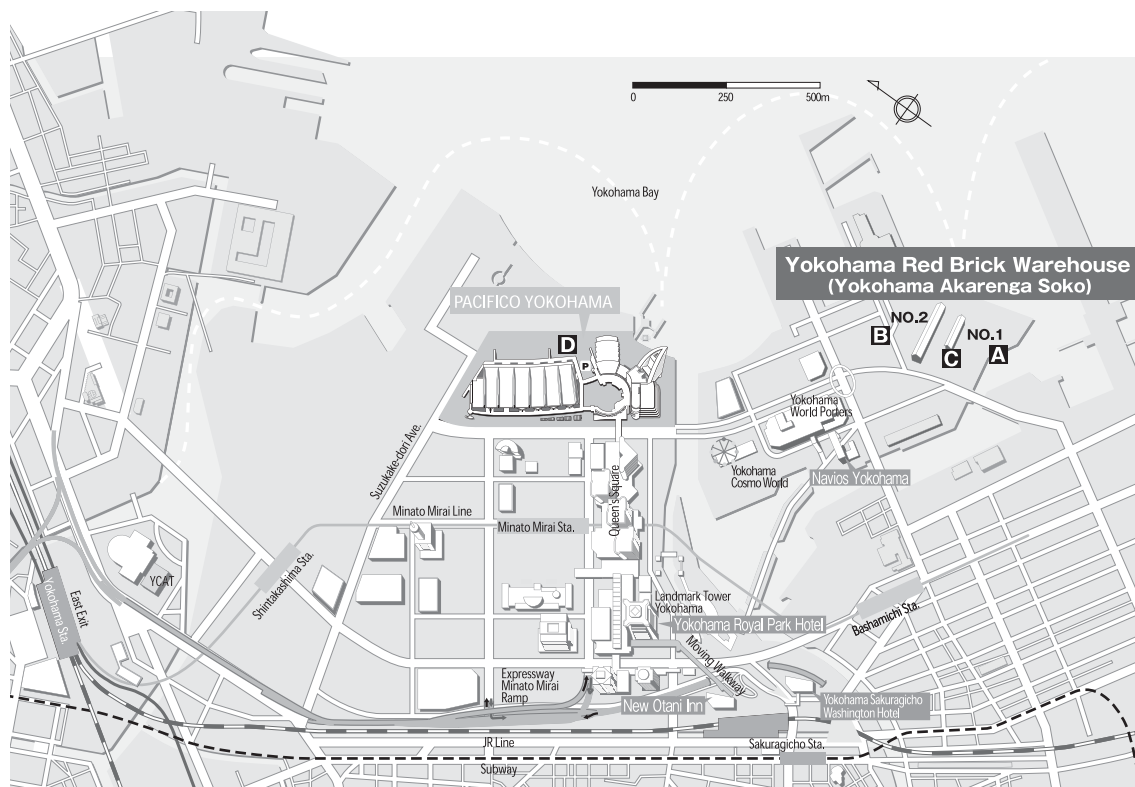
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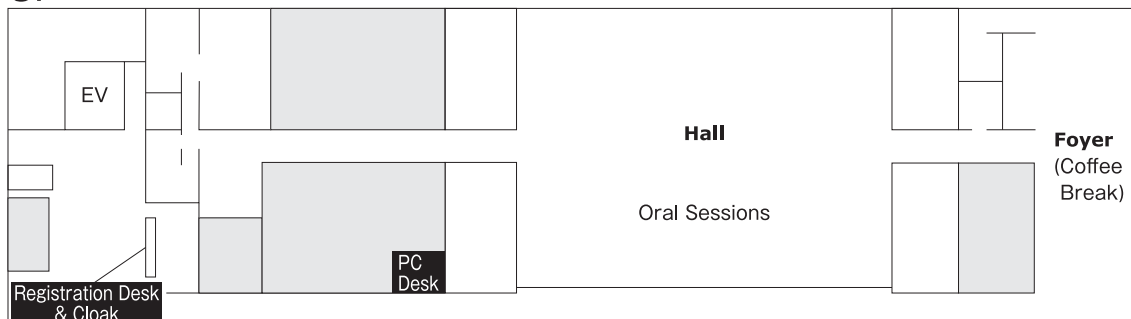
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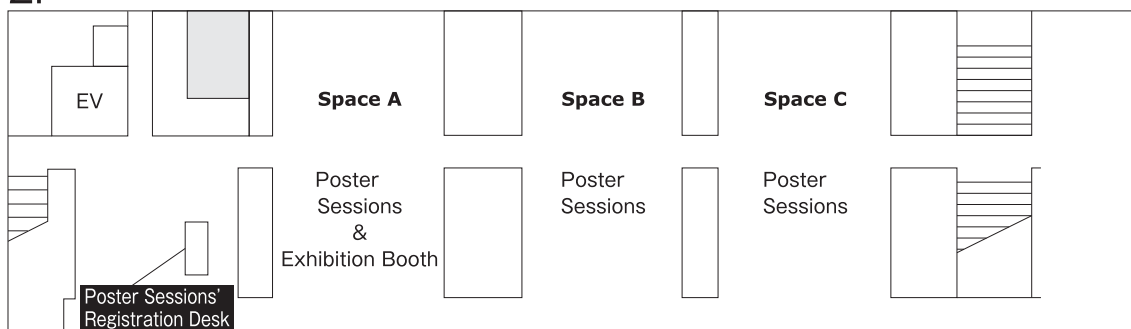
A	Scientific Sessions and Exhibition (Yokohama Red Brick Warehouse No. 1)
B	Welcome Reception (October 11) and Lunch *The details are on P29 *The details are on P34
C	Meeting Point for Fishing Dinner (October 12) *The details are on P30
D	Gala Dinner (October 13) *The details are on P31

Floor Layout

3F



2F



Poster Location

Space A

- P-1-01~18 Cancer monitoring and control planning / General topics and screening
 P-1-19~40 Cancer monitoring and control planning / Incidence and mortality (1)

Space B

- P-1-41~57 Cancer monitoring and control planning / Incidence and mortality (2)
 P-1-58~78 Cancer monitoring and control planning / Survival
 P-4-01~20 Cancer registration for evaluation of risk factors

Space C

- P-2-01~30 Quality of cancer care and outcomes research
 P-3-01~29 Methodology of cancer registry -up to date-

Exhibition Booth

ELEKTA, INC.
 Link Information System Co., Ltd.
 Skill Information "S" Co., Ltd.
 NCRA and NAACCR
 Dai Nippon Printing Co., Ltd.
 Plumsix Co., Ltd.

Social Program

Welcome Reception

Date: Monday, October 11, 19:00 - 21:00

Venue: Bar TUNE (3rd floor, Yokohama Red Brick Warehouse No. 2)

Tel: 045-226-1931

Location: Indicated on the map on page 27

Reception fee: Included in the registration fee for participants and accompanying persons

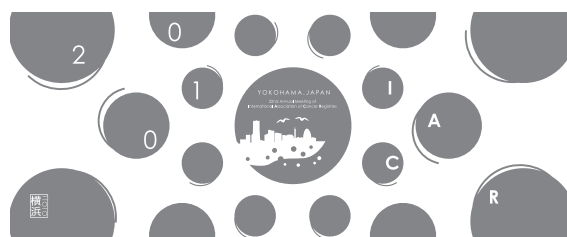
Welcome to Yokohama! You will be treated to sushi such as you have never seen! Please look forward to it.

■ Sushi (Makizushi & Chirashi zushi)

Sushi is a Japanese dish consisting of cooked vinegared rice which is commonly topped with other ingredients, such as fish or other seafood. Makizushi and Chirashizushi are derived from Sushi. Makizushi is served rolled inside or around dried and pressed sheets of seaweed. Chirashizushi is a bowl of sushi rice with toppings scattered over it. The demonstrator of this event is Ken Kawasumi, who has no equal when it comes to making a decorated makizushi. He is a full-time instructor at Tokyo Sushi Academy, runs a Sushi restaurant, and has been the champion of a sushi contest on TV champion show. He also keeps a writing action about sushi and makes a contribution for circulating Japanese sushi throughout the world.

■ Tenugui

A Tenugui is a thin Japanese hand towel made of cotton. It is typically plain weaved and is almost always printed with some pattern. It can be used for anything a towel could be used for - as a washcloth, dishcloth, headband, souvenir or decoration. Towels made from terry cloth have replaced many of its uses in the household. However tenugui is still popular as a souvenir, it also can be used for decoration and as a head covering in Kendo.

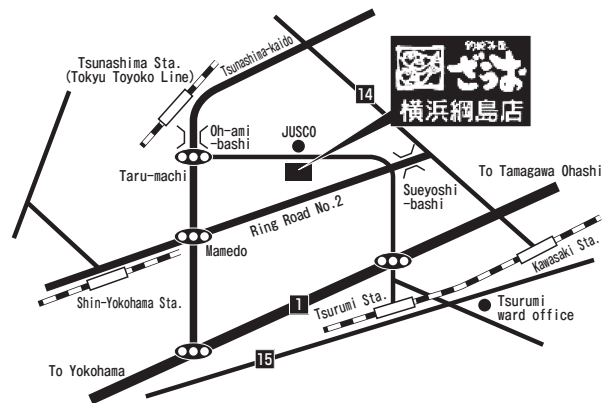


Fishing Dinner

Date: Tuesday, October 12, 19:00 - 22:00

Venue: ZAUO "Fishing" restaurant
(2-14-1, Komaoka, Tsurumi-ku, Yokohama)
Tel: 045-570-1288

- 15-minute walk from Tsunashima Station (Tokyu Toyoko Line)
- 5 minutes by taxi from Tsunashima Station (Tokyu Toyoko Line)
- 30 minutes by taxi from Yokohama Red Brick Warehouse (about 4,500 JPY)



Meeting point: 18:30 Entrance of Yokohama Red Brick Warehouse No.1

Chartered Bus transfer will be organized. Or you can meet us at the restaurant. (Transportation is at your own expense.)

Dinner fee: Included in the registration fee for participants and accompanying persons

Bring your dinner ticket in your congress bag

An ordinaly dinner party? We are planning to hold an "interactive" dinner in the Zauo restaurant. Saint Paul said in the Bible, "If man will not work, he shall not eat." You have to fish if you want to satisfy your hunger. We also serve dishes with various meats and vegetables. Don't worry, meat-eating participants!

■ Masu

A masu was originally a square wooden box used to measure rice in Japan during the feudal period. One masu was supposedly enough rice to feed a person for one day. Today masu are largely used for drinking sake, as the advent of modern rice cookers and a higher calorie diet in Japan has made them impractical for measuring portions of rice, and the standard size is one "gō", or 0.18039L. You will enjoy drinking sake from a masu while at Zauo!



Gala Dinner

Date: Wednesday, October 13, 19:00 - 22:00

Venue: Ristorante ATTIMO (2nd floor at Exhibition Hall, PACIFICO YOKOHAMA)
(1-1-1 Minatomirai, Nishi-ku, Yokohama)

Tel: 045-640-1270

Location: Indicated on the map on page 27

- From Red Brick Warehouse
 - 15-minute walk
 - 10 minutes by Seabass (boat)
- From Minato Mirai Station (Minato Mirai Line) : 3-minute walk
- From Sakuragicho Station (JR or Subway): 12-minute walk
- From Yokohama Station: 7 minutes by taxi or 15 minutes by Seabass (boat)

<Seabass Timetable>

Yokohama Red Brick Warehouse	MM21 · Pukari Sanbashi (Ristorante ATTIMO)
340 JPY	
18:20	18:30
19:10	19:20
19:30	19:40

Yokohamaeki Higashi Guchi (Yokohama Station)	MM21 · Pukari Sanbashi (Ristorante ATTIMO)
400 JPY	
18:35	18:50
18:55	19:10

Dinner fee: Included in the registration fee for participants and accompanying persons

Bring your dinner ticket in your congress bag.

How about dining in a relaxed atmosphere in sharp contrast to the night before? Ristorante ATTIMO is an Italian restaurant with an ocean view of the Yokohama port from the 2nd floor at Exhibition Hall of PACIFICO YOKOHAMA in Minato Mirai 21. It is about a 15-minute walk from Yokohama Red Brick Warehouse.

Only seasonal foods such as vegetables obtained from contract farmers and seafood sent directly from the fishermen are served.

General Information

Official Language

The official language of the meeting is English. No simultaneous translation is provided.

On-site Registration

The registration desk will be open during the following hours at the congress venue (Lobby, 3rd Floor, Yokohama Red Brick Warehouse No. 1).

October 12 (Tue) 8:30am – 4:30pm
October 13 (Wed) 8:30am – 4:30pm
October 14 (Thu) 8:30am – 11:00am

Registration Fee (On-Site)

Full Conference Coverage 50,000 JPY

Accompanying Person 20,000 JPY

Pre-Meeting Course 5,000 JPY

All payments must be made in Japanese yen by cash or credit card.
(Visa and Master card only)

	Full conference coverage	Accompanying persons fee
Admission to all meeting scientific sessions and access to the exhibition area	◎	
Meeting materials (Abstracts and program, name badge, certificate of attendance)	◎	
Refreshments during the session breaks	◎	
Lunch Voucher* (5,000 JPY voucher for 3 days, details are on P34.)	◎	
Welcome Reception Monday, October 11* (The details are on P29)	◎	◎
Fishing Dinner Tuesday, October 12* (The details are on P30)	◎	◎
Gala Dinner Wednesday, October 13* (The details are on P31)	◎	◎

*not including the JACR member tariff

Extra activities which are free of charge:

- Asian Cancer Registry Network event (October 14)
- Extension course organized by the JACR (October 15)

Pre-registered Participants

Participants who already pre-registered must bring the printout of the pre-registration confirmation to receive the name badge.

Name Badge

Upon registration, each participant will receive a badge. There will be no admittance to scientific sessions without the meeting identification badge. Invitations for the social events will be collected on entry. The meeting identification will be also most helpful in contacts with other participants.

Certificate of Attendance

Each participant will receive a Certificate of Attendance of the 32nd Annual Meeting of IACR at the lobby, 3rd floor, Yokohama Red Brick Warehouse No. 1 in Thursday, October 14, 8:30-13:00.

No Smoking

Smoking is prohibited at all areas of the venue.

Cellular Phones

Using cellular phones while in the lecture halls is prohibited. Cellular phones must be turned off or set to silent mode at all times while in the venue.

Vendor Exhibition

The vendor exhibition is held on the 2nd floor of the venue.

Cloakroom

A cloak is provided on the 3rd floor.

Internet Access

Wireless LAN is available on the 2nd floor of the Red Brick Warehouse No. 1. However, PCs are not provided.

FREE SPOT WiFi is available in Cafe "Chanoma" and a paid WiFi connection "wi2" is available in the whole Red Brick Warehouse No. 2 building (6 hours 350 JPY, one day 800 JPY, 3 days 1,500 JPY, <http://300.wi2.co.jp/en/area/yokohama/index.html>).

Coin operated internet terminals are available in the Navios Hotel, as well.

Message Forwarding

Any calls and messages received during the congress will not be forwarded directly to you. All messages, both to and from should be posted on the message boards situated at the lobby on the 2nd floor.

Lunch Voucher

Lunch vouchers that are worth 5,000 JPY in 3 days (two 500 JPY vouchers and four 1,000 JPY vouchers) are provided to the meeting participants.

500 JPY



1,000 JPY



- Available to use at all restaurants, cafes and stores in the Yokohama Red Brick Warehouse No. 1 and No. 2
- Vouchers are valid for 3 days from Tuesday, October 12 to Thursday, October 14
- No change given from voucher
- No cash alternative for voucher

The following list shows all the restaurants and cafes at which meal vouchers are valid for lunch.

Warehouse No.1 2F

	Name	OPEN (seats)	Menu
Café & Sweets	SAND GLASS Y150	10:00-19:00 (62 seats)	Cake set 1,200 JPY- Salt cake set (with Salad, Fruits, Drink) 840 JPY-

Warehouse No.2 1F

↓	No. in the floor Guide	Name	OPEN (seats)	Menu
11	Café & Sweets	YOKOHAMA BASHAMICHI ICE	11:00-20:00 (8 seats)	Ice cream: Milk 290 JPY-
12	Café & Sweets	CAFÉ BELLBE (カフェ ベルベ)	11:00-21:00 (26 seats)	Curry bread 220 JPY- Sandwich set (sandwich, coffee, salad, dessert) 1,050 JPY
13	Restaurant	Kiyoken (崎陽軒)	11:00-21:00	Chinese Noodle set (with steamed meatball dumpling) 900 JPY- Rice Bowl (with steamed meatball dumpling) 900 JPY
14	Café & Sweets	BREIZH Café	11:00-21:00	Galette set (with drink) 980 JPY- Crepe set (with drink) 680 JPY-
15	Café & Sweets	Nana's green tea	11:00-21:00	Japanese green tea (ice/hot) 450 JPY- Japanese green tea with ice cream 550 JPY-
16	Restaurant	Yokohama Tachibana tei (横浜たちばな亭)	11:00-21:00	Rice Omelet 890 JPY- Fried pork sandwich 970 JPY Fried pork on rice curry 850 JPY
17	Restaurant	KUA 'AINA	11:00-21:00	Hamburger 820 JPY-, Cheeseburger 930 JPY- Sandwich 710 JPY-
18	Café & Sweets	CHEZ MADU	11:00-20:00 (10 seats)	Donuts: 180 JPY-
19	Café & Sweets	Café Madu	11:00-23:00, Dinner 18:00- (96 seats)	Pizza lunch (with salad and drink) 1,890 JPY Pasta lunch (with salad and drink) 1,260 JPY Salad lunch (with bread and drink) 1,260 JPY
20	Restaurant	Bills	9:00-23:00 (120 seats)	Scrambled egg and toast 1,200 JPY Pancake with berry butter and fresh berry 1,400 JPY

Warehouse No.2

3F

	No. in the floor Guide	Name	OPEN (seats)	Menu
38	Restaurant	BEER NEXT	11:00-23:00 (248 seats)	Curry lunch (with salad) 1,000 JPY- Pasta lunch (with salad) 1,200 JPY- Hamburger steak (with salad and bread or rice) 1,280 JPY-
40	Café & Sweets	Chano-ma	11:00-23:00 (136 seats)	Lunch set (with bread and drink) 1,200 JPY- Beef stew, Gratin, Pasta
41	Restaurant	Benitoragyouzabou THE BUND QUEEN Shanghai (紅虎餃子房)	11:00-23:00 (150 seats)	Lunch set (with rice, soup, salad and dessert) 980 JPY- Chinese dumpling, Tofu in Chinese spicy sauce, Fried chicken Noodle set (with dumpling and salad) 1,280 JPY- Szechuan sesame spicy noodles, Pan-fried noodles

Refreshments

During the session breaks, refreshments will be served free of charge to participants wearing registered identification badges in the 3rd floor, foyer at Yokohama Red Brick Warehouse No. 1.

Insurance

Neither IACR nor the local organizing committee can accept responsibility for personal losses, accidents, or damages to participants and/or accompanying persons. Participants are therefore strongly advised to obtain personal insurance to cover any eventuality that may occur during the meeting.

ATM Machine

Do you need cash?

Nearest ATM machine, which accept your international credit card, is available in the Yokohama World Porters Bldg, 5 min walk from the conference venues. Use the one of the Postal Bank "Yucho bank". Please note that all the other ATM machines of regular banks accept only Japanese card.

Yucho Bank Saitama branch (in the Yokohama World Porters Bldg.) 2-2-1, Shinko, Naka-ku, Yokohama, 231-0001

Important Phone Numbers

Police : 110

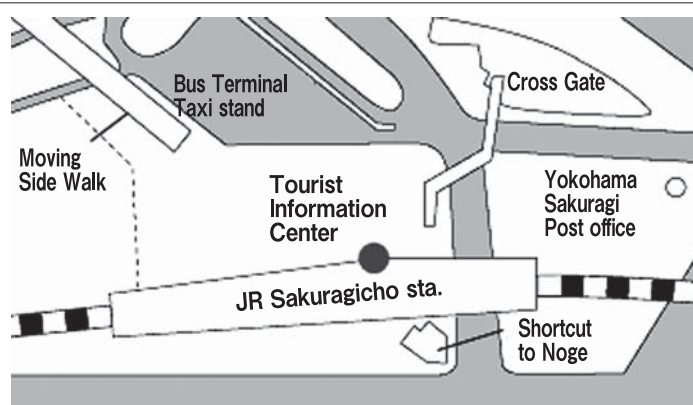
Fire : 119

Ambulance : 119

Tourist Information Center

1-1 Sakuragi-cho, Naka-ku, Yokohama, 231-0062
Tel:045-211-0111

9:00-19:00



Abstracts

Plenary Sessions

October 12 (Tue) 9:45-10:05	
Plenary Session1	Takamasa Kayama
October 12 (Tue) 10:05-10:35	
Plenary Session2	Christopher P. Wild
October 12 (Tue) 10:55-11:25	
Plenary Session3	David Forman
October 13 (Wed) 9:00-9:30	
Plenary Session4	Tomotaka Sobue

Plenary Session 1

SOCIETY AND CANCER REGISTRATION: TOWARDS HARMONIZATION

Takamasa Kayama

National Cancer Center, Japan



The first survey of cancer morbidity in Japan was conducted from 1951 to 1953 in Miyagi Prefecture by Dr. Mitsuo Segi. Since then, significant efforts have been made to establish a cancer registration system in Japan. In 1975, Dr. Isaburo Fujimoto organized the Research Group for Population-Based Cancer Registration with assistance from a grant by the Ministry of Health, Labour and Welfare, which has been supporting the development of the necessary fundamental infrastructure for cancer registration. The Japanese Association of Cancer Registries (JACR) was organized in 1992 to promote standardization of the registration process and improve the quality of registry data. Currently, 38 of 47 prefectures are operating population-based cancer registries.

In 2006, the Cancer Control Act was passed. It emphasizes the active commitment of cancer patients and their families to cancer control activities. A major goal of this legislation was to decrease disparities in the quality of cancer care throughout Japan. In order to measure quality, however, detailed clinical information, established guidelines, and well-defined quality indicators are needed, and these may not be provided by cancer registries alone. Thus, it became necessary to pursue an integrated health care database, using electronic data already accumulated and recent advances in information technology.

Japan is facing a rapid increase in the number of elderly cancer patients. It is estimated that, in 2030, 68.8% of cancer deaths will be among those aged 75 years or older, which is the highest such proportion in the world. Mortality reduction from cancer is not always the most important endpoint for elderly cancer patients, as they may have other problems, such as limited daily function and comorbid conditions. Cancer registry data can be used as a framework for a comprehensive database, which would provide a useful initial step toward harmonization of society and cancer registration.

Takamasa Kayama

Current Titles and Affiliations:

Chief Director of National Cancer Center (NCC).
President of NCC Hospital
Director of Center for Cancer Control and Information Services, NCC

Qualifications:

1975 M.D.
1982 Ph.D., Department of Neurosurgery,
Tohoku University, School of Medicine

Education: 1969-1975 Tohoku University School of Medicine

Professional Experience:

1978 Guest researcher, Department of Neurosurgery,
Justus Liebig University West Germany(Professor HW Pia).
1981 Assistant, Department of Neurosurgery,
Tohoku University School of Medicine.
1983 Staff, Department of Stroke Center and Neurosurgery,
National Hospital Sendai.
1990 Lecturer, Department of Neurosurgery,
Tohoku University School of Medicine
(Professor Takashi Yoshimoto).
1994 Associate Professor, Department of Neurosurgery,
Yamagata University Faculty of Medicine.
1996 Professor and chairman, Department of Neurosurgery,
Yamagata University Faculty of Medicine.
2002 Director, Yamagata University Hospital.
2003 Dean, Yamagata University Faculty of Medicine.
2010 Chief Director, National Cancer Center,
President, National Cancer Center Hospital,
Director, Center for Cancer Control and Information Services

Members and Executive Members of Academic Society:

Science Council of Japan, 2008 to date
Japanese Society of National Medical Services, 2010 to date
Japan Neurosurgical Society, 2009 to date
Japanese Congress for Brain Tumor Surgery, 2007 to date
The Japan Society for Neuro-Oncology, 2009 to date
The Japan Stroke Society, 2009 to date
The Japan Brain Dock Society, 2009 to date
Japan Society of Clinical Oncology, 2006 to date
American Association of Neurosurgical Society, 1999 to date
Academia Eurasiana Neurochirurgica, 2009 to date

Recent National Conference Presidents:

2000 President of the Japanese Congress for Brain Tumor Surgery
2003 President of the Japan Society for Stereotactic and
Functional Neurosurgery
2004 President of the Japan Society for Neuro-Oncology
2006 President of the Japanese Society for Neuroendoscopy
2006 President of Annual Meeting of Japanese Society on Surgery for
Cerebral Stroke
2007 President of the Japan Society for Hypothalamic and Pituitary Tumors
2010 President of the 19th Meeting for the Japan Brain Dock
2011 President of the 70th Conference for Japan Neurosurgical Society

Members of Academic Study Groups at Present : playing a role of leader or the subsequent at each group

- Global COE Program: study group under the Japan Society for the Promotion of Science
- 2 study groups related to Health and Labour Sciences Research Grant

Members and Executive Members of the committees of the following public organizations:

- Ministry of Health, Labor and Welfare
- Ministry of Education, Culture, Sports, Science and Technology
- Association of Japanese Medical Colleges
- Mitsubishi Pharma Research Foundation
- Council of Head of National Medical Schools of Japan
- Japan Society for the Promotion of Science

Plenary Session 2

CANCER RESEARCH FOR CANCER PREVENTION: OPPORTUNITIES AND PRIORITIES FOR CANCER REGISTRIES

Christopher P. Wild

International Agency for Research on Cancer, France



Background

Based on demographic changes alone, the annual global burden of cancer is estimated to almost double in the next 20 years from the current 12.7 million new cases. The burden will increasingly fall on the low- and middle-income countries, where the health services are least able to cope with the challenge. This inequality is highlighted by the markedly lower cancer survival rates in these regions compared to economically richer countries.

Methods

Much can be done now for cancer prevention, notably to limit tobacco and alcohol use, to introduce vaccines against oncogenic viruses, to combat excessive sunlight exposure, to promote an active lifestyle and to implement screening and early detection. It is noteworthy that these interventions, whilst valuable, often require additional research in relation to implementation in order to have a maximum impact at a population level. At the same time, greater understanding of aetiology is needed, given that many cancers worldwide remain of unknown cause. This implies research into risk factors must parallel that into prevention; this combination should be the priority for cancer research in the coming decade.

Results

Whilst geographic and temporal variations in cancer incidence contributed to a realisation of the major role of environmental risk factors in cancer aetiology, the precise contribution of specific agents and their interaction, both with each other and with genetic background, is difficult to elucidate. This is at least partially due to limitations in accurately measuring exposure. Recent advances in laboratory sciences have been paralleled by an increased understanding of mechanisms of carcinogenesis (e.g. epigenetics). These exciting developments should translate into biomarkers which improve exposure assessment but also help establish the biological plausibility of exposure-disease associations and thus provide a bridge from epidemiology to data from experimental studies of carcinogenesis. Some of these novel biomarkers may also serve as intermediate endpoints in intervention studies.

Discussion

Cancer registration must play a pivotal role in cancer prevention and control. Aside from providing valuable data on cancer burden, geographic and temporal trends in incidence can stimulate novel hypotheses on aetiology whilst the identification of cancer cases, for example within prospective cohorts, places registries as an integral part of aetiological research. Finally, through linkage to other data sets, registries can play a vital role in evaluating the impact of public health interventions and cancer services on cancer burden across a population. Never has an inter-disciplinary approach to cancer prevention been more promising than the present day, with cancer registration a key component at this time of opportunity.

Christopher P. Wild

Christopher Paul Wild obtained his PhD in 1984 from the University of Manchester, UK whilst working on the production of monoclonal antibodies to detect low levels of methylated DNA bases. He was awarded a post-doctoral fellowship from the International Agency for Research on Cancer (IARC) to work in Lyon, France and subsequently a UK Royal Society European Exchange Fellowship to spend a year at the Netherlands Cancer Institute in Amsterdam. In 1987 he rejoined IARC as a staff scientist and later became Chief of the Unit of Environmental Carcinogenesis. In 1996 he was appointed to the Chair of Molecular Epidemiology at the University of Leeds, was Head of the Centre for Epidemiology and Biostatistics and later became Director of the Leeds Institute of Genetics, Health and Therapeutics in December 2005. He was elected Director of IARC from 1st January 2009. Dr Wild's main research interest is to understand the interplay between environmental and genetic risk factors in the causation of human cancer. He has particularly sought to apply biomarkers in population-based studies to this end.

Plenary Session 3

CANCER INFORMATION, REGISTRIES AND IARC: A FUTURE PERSPECTIVE

David Forman

Section of Cancer Information, International Agency for Research on Cancer (on behalf of the International Cancer Benchmarking Partnership), France



Projections of the global cancer burden for 2020 indicate x million new cases will be diagnosed and y million deaths from cancer will occur annually. The majority of these will arise in low and middle resource regions of the world. The requirement for rigorous epidemiological research and cancer control programmes will be, therefore, of critical importance in the decade ahead and such programmes will need a foundation of information supplied by cancer registries. For this reason, the International Agency for Research on Cancer (IARC) has highlighted the description of the global cancer burden as the first of six objectives in its new strategic plan.

The Section of Cancer Information (CIN) within IARC has the responsibility of delivering this objective and has recently been restructured in order to meet the growth in cancer information requirements worldwide. This presentation will describe new initiatives within IARC and will focus on those areas where interaction with and feedback from IACR and cancer registries is critical.

In terms of data collection, priority will be given to improving the extent and standards of registration in low and middle income countries. This is most likely to be brought about by the development of sentinel centres which will generate high quality data and act as regional reference points for training and support.

In terms of data analysis and presentation, many new developments with Cancer Incidence in Five Continents (CI5) are under discussion to make most efficient use of new technology. These include improved online data submission and quality control procedures, faster analysis and publication turn around and increased use of web-based technology. This, in turn, raises options of publishing more frequently than with the current five year cycle, publishing results where not all registries comply with the quality standards of CI5 and feeding results from CI5 into the estimates made available through GLOBOCAN.

To complement these activities, IARC will be working with registries, research networks and other international organisations to provide routine survival and

prevalence information and, where possible, to collect comparable information on key clinical variables such as stage at diagnosis.

In order to realise these developments to their full extent and make the best use of cancer registration information in responding to the growing burden of disease, collaboration between IARC and the member organisations of IACR will be essential.

David Forman

Dr Forman is Head of the Cancer Information Section at the International Agency for Research on Cancer (IARC) based in Lyon, France. This Section of IARC is responsible for the provision of information concerning worldwide cancer vital statistics and produces the definitive reference source "*Cancer Incidence in Five Continents (CI5)*", published in nine successive volumes over the last 45 years. Part of this responsibility includes the provision of support to cancer registries worldwide especially in low and medium resource countries. The Section also maintains an active research program in the descriptive epidemiology of cancer.

Prior to taking up his appointment at IARC in April 2010, Dr Forman was, from 1994, Professor of Cancer Epidemiology at the University of Leeds, UK and Director of the Northern and Yorkshire Cancer Registry. He was also Head of Analysis and Information for the UK National Cancer Intelligence Network. From 1982 to 1994, he was a Staff Scientist with the Imperial Cancer Research Fund Epidemiology Unit in Oxford, UK working initially with Sir Richard Doll. Dr Forman's PhD and postdoctoral research was in cancer biology.

Dr Forman's research profile includes studies in the epidemiology of cancer and he has also been involved in health services research in cancer and, in association with the Cochrane Collaboration, systematic reviews and meta-analyses in upper gastrointestinal disease. Much of his research has been focused on cancers of the gastrointestinal tract and he has been particularly identified with studies examining the association between stomach cancer and *Helicobacter pylori* infection. He has 200 publications in peer reviewed journals.

Plenary Session 4

CANCER REGISTRATION IN JAPAN: CURRENT STATUS AND FUTURE DIRECTION

Tomotaka Sobue

Cancer Information Services and Surveillance Division, Center for Cancer Control and Information Services, National Cancer Center, Japan



In Japan, population-based cancer registries are run by prefectural governments. Currently, 38 of 47 prefectures are operating such registries. Since 1975, nationwide cancer incidence has been estimated by using 5 to 14 satisfactorily complete cancer registries. In 2010, it was reported that there were an estimated 646,802 new cancer cases in 2005.

In 2006, the Cancer Control Act was approved. At the same time, the Center for Cancer Control and Information Services (CIS) at the National Cancer Center (NCC) was launched, and two sections for cancer registration (population-based and hospital-based) were created in the NCC-CIS. At the local level, 377 hospitals are now designated as cancer care hospitals by the national government. All such designated cancer care hospitals (DCCHs) are requested to oversee a hospital-based cancer registry using standardized procedures and to report their individual data to the NCC-CIS. In 2009, data for 327,889 new cancer cases diagnosed in 2007 were reported from 305 DCCHs, which corresponded to almost half of all new cancer cases in Japan.

To date, three types of cancer registries (i.e., population-based, hospital-based, and site-specific registries) have been operating in Japan. Population-based registries measure incidence and survival at the population level; hospital-based registries monitor clinical activities and survival at each hospital. Site-specific registries are managed by academic societies and are used for improving stage definition and guidelines. To ensure high-quality cancer care to all cancer patients, these three types of cancer registries should cooperate, while simultaneously assuming responsibility for their respective roles.

Tomotaka Sobue

Professional Appointments

1983-1994: Epidemiologist, Osaka Medical Center for Cancer and Cardiovascular Diseases

1994-2002: Section Head, Cancer Information and Epidemiology Division, National Cancer Center Research Institute

2002-2003: Chief, Cancer Information and Epidemiology Division, National Cancer Center Research Institute

2003-2006: Chief, Statistics and Cancer Control Division, Research Center for Cancer Prevention and Screening, National Cancer Center

2006-present: Chief, Cancer Information Services and Surveillance Division

Center for Cancer Control and Information Services, National Cancer Center

Education

1983: Osaka University School of Medicine, MD

1987: Johns Hopkins University School of Hygiene and Public Health, MPH

Specialty and Present Interest

Cancer Registry, Cancer Screening, Cancer Epidemiology, Cancer Control

Abstracts

Key Note Lectures & Scientific Sessions

October 12 (Tue)

11:25-12:40	Scientific Session 1 Cancer incidence and mortality (1)	O-1-1~O-1-5
14:30-14:55	Key Note Lecture for Scientific Session 2	Renée Otter
14:55-15:55	Scientific Session 2 Quality of cancer care and outcome research (1)	O-2-1~O-2-4
16:15-16:40	Key Note Lecture for Scientific Session 3	Kazunori Kodama
16:40-17:55	Scientific Session 3 Cancer incidence and mortality (2)	O-1-6~O-1-10

October 13 (Wed)

9:30-9:55	Key Note Lecture for Scientific Session 4	You-Lin Qiao
9:55-10:55	Scientific Session 4 Cancer registration for evaluation of risk factors	O-4-1~O-4-4
11:15-11:40	Key Note Lecture for Scientific Session 5	Masashi Mizokami
11:40-12:40	Scientific Session 5 Cancer survival (1)	O-1-11~O-1-14
14:30-14:55	Key Note Lecture for Scientific Session 6	Freddie Bray
14:55-16:10	Scientific Session 6 Cancer registry methods	O-3-1~O-3-5
16:30-16:55	Key Note Lecture for Scientific Session 7	Jean-Michael Lutz
16:55-18:10	Scientific Session 7 Cancer survival (2)	O-1-15~O-1-19

October 14 (Thu)

9:00-9:25	Key Note Lecture for Scientific Session 8	Joseph Lipscomb
9:25-10:25	Scientific Session 8 Quality of cancer care and outcome research (2)	O-2-5~O-2-8
10:45-11:45	Scientific Session 9 Cancer incidence and mortality (3)	O-1-20~O-1-23

O-1-01

AN ANALYSIS ON THE INCIDENCE AND MORTALITY RATE OF UPPER GASTROINTESTINAL CARCINOMA FROM 2000 TO 2008 IN SHEXIAN CHINA

Denggui Wen¹, Nan Zhang³, Fuzhi Zhang², Yongwei Li², Zhengliang Fu²,
Baoren Shan², Shijie Wang²

¹ 4th Hospital of Hebei Medical University, China

² Shexian Cancer Registry, China

³ Niigata University, Japan

Background

To describe the incidence and mortality rates of malignant tumor from 2000 - 2008 in Shexian county, a high-risk area for upper gastrointestinal cancer of Hebei province in northern China.

Methods

In 1999, a population-based cancer registry system in Shexian was established to collect information on cases diagnosed with cancer and on all-cause deaths. Data was collected from all possible sources before checked with the hospital record, then computerized, coded and analyzed using the software- SPSS 13.0.

Results

From 2000 to 2008, 9417 cancer cases were diagnosed in Shexian, including 5893 males and 3524 females. The age standardized incidence rate (ASR) for males was 325.8 per 100 000, and 210.7 per 100 000 for females. Among all kinds of cancers, the top incidence appears in esophageal cancer, carcinoma of non-gastric cardia, and carcinoma of gastric cardia with 26.7%, 24% and 20.6% in total. The trend of incidence rate of esophageal cancer had decreased during the 9 years from 2000 to 2008 (trend $X^2 < 0.05$), while the trend of carcinoma of gastric cardia had increased during the last 9 years (trend $X^2 < 0.05$). There were 7771 cases died of cancer, including 4953 males and 2818 females. The ASR for male was 273.8 per 100 000 and 168.5 per 100 000 for females. Among all kinds of cancers, the top mortality appears in upper gastrointestinal carcinomas too. The trend of mortality rate of esophageal cancer had decreased during the 9 years from 2000 to 2008 (trend $X^2 < 0.05$), while the trend of carcinoma of gastric cardia had increased during the last 9 years (trend $X^2 < 0.05$). From 35 years of age onward, the incidence rates of esophageal cancer, carcinoma of non-gastric cardia, and carcinoma of gastric cardia soared with the increase of age.

Discussion

The incidence and mortality rate of esophageal cancer, gastric cancer, and carcinoma of gastric cardia are among the highest in in Shexian for the last 9 years. Shexian County is a high risk area not only for esophagus cancer, but also for cardia cancer and stomach cancer. During the past nine year period, while the rate of esophageal cancer has decreased, that of the gastric cardia has increased.

O-1-02

EPIDEMIOLOGICAL PATTERN OF CHILDHOOD CANCER IN CASTILE AND LEON

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Background

National Registry of Childhood Cancer has been operating in Spain since 1980. Castile and Leon contributes to it with hospital-based reports. Since the cancer in children is a major cause of burden of illness and the low incidence allowed a detailed approach, our aim is to implement a population-based regional childhood cancer registry. It is needed to know the starting point, so we estimate the global and proportional incidence of childhood malignancies benefiting from the computerized diagnoses of hospital discharges as source of data.

Methods

We collected the information of all the patients younger than 15 years old that were first diagnosed of cancer (International Classification of Diseases for Oncology, 3rd Edition, codes equal or higher than 2 non-melanoma skin tumors excluded-) during the years 2003-2007 from registries recorded on the Minimum Basic Data Set (MBDS) from the public hospitals in Castile and Leon. Population was collected from the Regional Statistics Office. Incidence raw rates and age-standardized rates (ASR(W)) were calculated per million children-year, taking as reference the Standard World Population.

Results

During the five years included, 220 cases of childhood cancer have been reported. In the frequency ranking the most detected one was leukaemia (28.6%) followed by the central nervous system tumours (19.5%) and lymphoma (15.9%). For all cancer types combined the annual raw incidence rate and ASR(W) were 152.8 and 154.8 cases per million children-year respectively. Since the histological variety of the tumours is not always provided by MBDS, we found 74 cases (33.6%) classified as unknown or undefined.

Discussion

The overall incidence rates, both raw and age-standardized, by diagnostic groups of childhood cancer in Castile and Leon, was similar to those reported by other national and international registries. Once the regional childhood cancer registry would have been established our approaches could be useful as data source in the capture of new cases and could serve as reference in detecting frequency changes.

O-1-03

HARMONIZATION OF CANCER REGISTRIES IN LATIN AMERICA AND THE CARIBBEAN REGION: AN IMPORTANT CHALLENGE FOR IACR AND OTHER INTERNATIONAL ORGANIZATIONS

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Bahia Blanca Cancer Registry, National University for the South, Argentina

Background

Population Based Cancer Registries are recognized as important tools for cancer control and research.

In the last decades there has not been an important increase of the South and Central America registries in CIV: only 11 were accepted in IXth edition. IARC and more recently PAHO held meetings in 2007 and 2009 to face this problem. As IACR Regional Representant I participated in these meetings.

Methods

The purpose of this presentation is to summarize the main obstacles that countries of the region find to improve the cancer data quality and to suggest how the international associations like WHO could help this region in the future.

The results of an international survey and 3 Meetings are presented.

Results

From a survey I performed in 2007, the main obstacles found were: economic difficulties; lack of understanding on part of health professionals; difficulties in the data capture, lack of consistent Cancer Control Programs, the Health Systems put emphasis on assistance rather than prevention.

The final conclusion of the Brazilian Meeting, organized by PAHO and IARC in October 2009, urge the governments to improve the cancer information system recognizing the C. R as part of it and addressing several of the main problems. These recommendations were subscribed by all the participants that included one cancer registry representant and one government officer from nearly all the countries.

Discussion

Nevertheless, I have the conviction that to have a real impact on this difficult field, we need strong commitment from WHO itself and probably a useful strategy would be the invitation to all Parliaments in the Region to subscribe a Framework Convention on Cancer Control. Eventually, other regions of the world could also benefit.

The fact of including by law the cancer problem as an important issue in each country will certainly have an impact as the Framework Convention on Tobacco or Health did have. The new foundational Cancer Law could include the main points already highlighted and others not included: like reinforcing the preventive approach and the importance of having good quality cancer data in the health service curriculum.

O-1-04

INCIDENCE AND MORTALITY OF COMMON CANCERS IN MONGOLIA

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Background

Mongolia is the fifth largest country in Asia. In 2008, the resident population of Mongolia was 2,683,500, of which 48.8% were men and 51.2% were women. Sorted by age group, the population distribution was 28.1% for ages 0 - 14, 67.8% for ages 15 - 64, and 4.1% for age 65 and above (State Statistical Office, 2005). Mongolia is experiencing epidemiological transition over the last decade. The prevalence of lifestyle related chronic diseases is rapidly increasing and has become one of the main public issues. The top five leading causes of death have changed since 1989. Currently, cardiovascular diseases (CVDs), cancer, injuries and accidents are leading causes of mortality. During 1995-2000, circulatory system diseases, cancer and injuries have been increasing and remained priority health issues.

Methods

Data on all new cancer cases diagnosed in 2000-2009 in permanent residents of Mongolia were actively collected by the Registry. Incidence and mortality rates were calculated as mean annual numbers per 100,000 residents. Age-standardized incidence rates (ASRs) and age-standardized mortality rates (ASMRs) were calculated by the direct method from age-specific incidence and mortality rates, weighted to the World Population standard.

Results

Average in 2000-2009 the most common cancers in Mongolia are liver (38%), stomach (15%), lung (9%), esophagus (8%), cervix uteri (8%), breast (2%). The leading primary sites in males were liver, stomach, lung, esophagus, and lip, oral and pharynx, pancreas whereas in females they were liver, cervix, stomach, esophagus, lung and breast. The liver cancer is the most common cancer in both sexes. The cervical cancer is second common cancer in females. The cancer that causes the most deaths is liver (44%), stomach (16%), lung (11%), esophagus (9%), cervix uteri (3%), breast (1%). During these years, the incidence rate of all cancers increased from 119.4 to 153.0 cases per 100,000 population, and the mortality rate increased from 92.3 to 116.7 cases per 100,000 population. There were more incidences of cancer cases observed in adults aged 40-55 years and 83.7% of newly diagnosed cancers were detected at the late stages (I and III stages).

Discussion

There is no special screening program for early detection of screening of cancers for target population.

Lack of knowledge of population and health care providers on early detection.

Poor diagnostic capacity of cytology and mammography.

Emphasis is given in the National Cancer Control Program to these leading cancers. Key elements include prevention of liver and cervical cancer through vaccination, cancer prevention more generally through smoking reduction, dietary improvement and reductions in excess alcohol consumption, and earlier detection of cervical and breast cancers. Because leading cancers are generally those with a high case fatality, the Program calls for the limited treatment resources available to be focused on curing the curable and supporting quality of life for the incurable, with an increased availability and integration of palliative services.

O-1-05

PREDICTING CANCER INCIDENCE AND MORTALITY IN FINLAND UP TO 2020 USING SIMPLE LINEAR MODELS AND STATA MACROS

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Finnish Cancer Registry, Finland

Background

To facilitate health care in its decision making, reliable predictions of cancer rates into the future should be prepared routinely by cancer registries.

Methods

Based on the method developed at Finnish Cancer Registry such task has been done for Finland for some years. The most recent report presents predicted number of new cases and cancer incidence, as well as mortality, up to year 2020 in the form of age-specific and overall results.

Results

The application of the method has been successful for the majority of cancer sites in Finland, supported by satisfactory results of ex-post predictions made with past data. The method has also been applied abroad including the International Agency for Research in Cancer in Lyon.

Discussion

Obviously such work is potentially laborious and time consuming. However, the Stata macros written by the author allow to automate the whole predictive process and shorten it significantly. The presentation on the methods, software and the most recent predictions for Finland will benefit all current and future users of the method and thereby decision-making in cancer control in various countries of the world.

Key Note Lecture for Scientific Session 2

MONITORING A CANCER CONTROL PROGRAM IN EUROPE AND THE WORLD: MISSION IMPOSSIBLE WITHOUT CANCER REGISTRY

Renée Otter

Dutch Ambassador NCCP, Netherlands

President ACCC

Chief Executive Board CCCNE (IKNO)



Background

National Comprehensive Cancer Control programs (NCCCP) aim to pool resources to reduce the burden of cancer. The priority actions focus on the reductions of cancer risk, earlier detection, better and conditioned treatments and supportive care in order to decrease incidence and increase prevalence and survival.

Methods

Through a systematic and equitable detection and implementation of evidence based strategies for the different domains (prevention, earlier detection, diagnosis, treatment, palliative care, research, training & education of professionals) experts groups identify the main important needs. These have to be translated in SMART (Specific Measurable, Achievable, Realistic and Time) goals. In consequence implementation can be evaluated and improvement measures can be undertaken.

Results

According on the level of resources countries focus on different domains. However a cancer registry (CR) on incidence and mortality overtime is a condition sine qua non to monitor the burden of cancer. In addition the CR should have data on the stage of preventable cancers, before starting any screening program. Treatment data are only relevant when a suitable palliative care is available.

Conclusion

Pooling resources in order to reduce the burden of cancer through a NCCCP makes only sense when a pop-based CR exists and optimally used.

Renée Otter

Renée Otter has a background as medical oncologist, epidemiologist and CEO of the Comprehensive Cancer Centre North East. For more than 30 years she develops and supports the development of quality improvements instruments in cancer care using the population based cancer registry data in optima forma in collaboration with patients associations, medical professionals and nurses. Bench marking between hospitals with regards to outcome and best practices, peer review system (audits) and care pathways for patients with specific tumours are monitored by indicators registered in the cancer registry. The annual monitor of the actions undertaken within the NCCP is another example. NOt only diagnosis and treatement are relevant indicators, also the organisation and structure of care.

O-2-01

ONCOMONITOR; QUALITY INDICATORS FOR HOSPITALS BASED ON A POPULATION-BASED CANCER REGISTRY

Otto Visser

Comprehensive Cancer Centre Amsterdam, Netherlands

Background

Health insurance companies and the health authorities in the Netherlands require more and more data on quality of cancer care. Medical professionals also have a growing need for insight in their own results and comparing these with others (benchmark).

Methods

We reviewed the Dutch cancer guidelines and searched for indicators that could be developed from the guidelines. Subsequently we investigated which indicators could be calculated from the data available in the cancer registry. The selected indicators ('Oncomonitor') were calculated for each separate hospital (treatment hospital or hospital of first diagnosis, depending on the indicator), for the comprehensive cancer centre region and for the Netherlands as a whole.

Results

A total of 66 indicators were selected, 20 for gastrointestinal cancers, 9 for lung cancer, 7 for breast cancer 12 for gynaecological cancers and 18 for urological cancers. These included volume indicators, indicators of morbidity and mortality and indicators about compliance to the guideline. The results were sent to all hospitals in the region and the tumor working groups of the comprehensive cancer centre.

Discussion

Our results show that it is possible to develop a number of indicators from a population-based cancer registry. The cancer registry is an independent source for indicators. However, as many indicators are rather detailed, the data quality should be very high and the registry should have data on at least stage and treatment available. Besides, extensive quality checks are compulsory. In general, this is only possible if it is possible to review the registry data in hospitals.

New indicators for the Oncomonitor will be developed in future, while indicators of limited usefulness will be removed.

O-2-02

DOWN STAGING BREAST CANCER AMONG JORDANIAN FEMALES (2005-2008)

Omar F Nimri

Jordan Cancer Registry, Jordan

Background

The Jordan Cancer Registry (JCR) collects cancer data on a population bases from all over the kingdom (Jordan). Collected breast data (+750 case/ year) showed that more than 50% of patients are in the age group 40-59 with mean age at diagnosis of 49 years, and 69% of breast cancer patients were diagnosed at an advanced stage (stages III and IV) till the year 2005. Hence, an early Cancer Surveillance Program was started based on the (JCR) data with the intent of down staging the main and the leading cancer of Jordanian females as well the leading cause of mortality among them.

Methods

To collect timely and relevant data that will assist in the evolving needs to evaluate and report temporal trends monitoring changes in breast cancer stages outcomes for newly diagnosed patients. The program consisted of (1) Training health staff in hospitals and clinics to improve their skills in early cancer detection (2) Increase the number and distribution of mammogram machines for easy accessibility with supported cost of the mammogram test (3) Raising public awareness through media, campaigns, lectures, pamphlets, posters and sensitization by health staff.

Results

Data analysis revealed that the program achieved down staging in Breast cancer in stage (III and IV) was reduced from 69 % (2005) to 34% (2008). Other stages were also reduced.

Discussion

Early cancer surveillance programs including education of public and health staff can achieve proven down staging. The successful down staging observed here for breast cancer is an important finding that is relevant to developing countries where simple and efficient methods could be integrated into existing health care programs. The ensuing down staging should lead to a reduction in mortality for these cancers. It is cost-effective and easy to implement and would be a valuable alternative in countries where majority of the tumors are found in late stage (III and IV) where screening programs meet important difficulties.

O-2-03

YEARS IN GOOD HEALTH AMONG COLORECTAL CANCER SURVIVORS

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⁵ Dept of Health Care Policy, Harvard Medical School, USA

Background

Survival among colorectal cancer (CRC) patients has been increasing. Due to the cancer diagnosis, health and functional ability might deteriorate because patients are generally old and treatment can be aggressive. This study aims to assess the determinants of health and functional status among colorectal survivors. This will finally be used to estimate the proportion of remaining life that patients would spend in good health.

Methods

Using a population-based cancer registry database survival among CRC patients diagnosed in 2000-2006 and followed until 1/1/2008 was calculated. General health and functional disability was assessed through a self-reported Quality of Life questionnaire among a random sample of the survivors. Sullivan method was used to calculate Healthy Life Expectancy (HLE) and Disability Free Life Expectancy (DFLE).

Results

Survivors who reported poor health status were more likely to be female, of low middle and lower socioeconomic status, had stage IV disease and had 1 or more comorbidity at diagnosis. In addition, older age was associated with higher physical disability. There were no differences in health status by treatment. When compared to the general Dutch population, a similar proportion of the remaining life of colorectal cancer survivor will be spent in good health (75-77%). Survivors with stage I-III at diagnosis had similar proportion of remaining life in good health (74-84%), but those with stage IV colorectal cancer spent less than half of their remaining life in good health.

Discussion

Most colorectal cancer patients may expect to spend a large amount of their life in good health and without limitation. The high proportion of non-healthy years among the oldest old and those with advanced stage confirms the importance of assistance in daily functioning and palliative care.

O-2-04

CO-MORBIDITY, TREATMENT, OVERALL AND CAUSE-SPECIFIC SURVIVAL IN PROSTATE CANCER - A POPULATION-BASED STUDY IN SWEDEN

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⁴ Department of Surgical and Perioperative Sciences, Urology and Andrology,
Umeå University, Sweden

Background

To examine associations between co-morbidity and treatment decisions, overall and cause-specific survival in prostate cancer (PCa) patients.

Methods

By use of data in PCBaSe Sweden from the National Prostate Cancer Register of Sweden a total of 77,536 men diagnosed with PCa between 1997 and 2006 were identified. Logistic, Cox and Competing Risk regression were used to assess associations between Charlson Comorbidity Index, treatment and survival.

Results

Men with low risk prostate cancer and severe co-morbidity were less likely to undergo radical prostatectomy compared to men without co-morbidity (OR 0.48; 95% CI 0.41-0.55, $p < 0.001$). In all clinical risk groups, surveillance and hormonal treatment was more often the treatment of choice in men with severe co-morbidity. Following adjustment for prognostic factors, patients with severe compared to those without co-morbidity had an increased risk of overall death (HR 1.97; 95% CI 1.92-2.00), while no difference was observed in cause-specific survival (sHR 0.96; 95% CI 0.91-1.01). However, in conditional analyses given no death from competing causes, PCa mortality was significantly higher for men with severe co-morbidity, primarily in advanced PCa ($p < 0.01$).

Discussion

Men with severe co-morbidity received less active treatment and had a poorer prognosis indicated by overall and conditional cause-specific mortality compared to men with no co-morbidity. These observed differences could not entirely be explained by the treatment activity. Our study suggests that concomitant disease plays an important role for outcome, therefore we cannot rule out under treatment in men with severe co-morbidity, particularly in patients with advanced prostate cancer.

Key Note Lecture for Scientific Session 3

RADIATION AND CANCER INCIDENCE IN ATOMIC BOMB SURVIVORS - EFFECTIVE USE OF CANCER REGISTRY DATA -

Kazunori Kodama



Radiation Effects Research Foundation, Hiroshima and Nagasaki, Japan

To determine health effects of Atomic-bomb (A-bomb) radiation in A-bomb survivors, the Radiation Effects Research Foundation (RERF) has been conducting studies on the Life Span Study (LSS) population which consists of 93,000 A-bomb survivors and 27,000 controls.

RERF has been collecting cancer incidence data on this LSS population, using information from local cancer registries in Hiroshima and Nagasaki, for its research on relationship between A-bomb radiation exposure and cancer incidence. These local cancer registries were established in Hiroshima in 1957 and in Nagasaki in 1958. Subsequently, the medical associations initiated prefectural tissue registries, which enabled registration of information on patients undergoing biopsy or surgery.

The most important result of the LSS is observed elevation of cancer risk with increase of radiation dose. In the recent report on the incidence of solid cancers for the period from 1958 to 1998, it is estimated that, at age 70 following exposure at age 30, solid-cancer rates increase by about 35% per Gy (90% CI: 28%; 43%) for men and 58% per Gy (90% CI: 43%; 69%) for women. The data were consistent with a linear dose response over the 0 to 2 Gy range. It appears that radiation-associated increases in cancer rates persist throughout life. Significant radiation associated increases in risk were seen for cancers, including oral cavity, esophagus, stomach, colon, lung, non-melanoma skin, breast, ovary, bladder, nervous system, and thyroid. Dose response estimates for cancers of the rectum, gallbladder, uterus, pancreas, prostate and kidney were not statistically significant.

In view of the nature of the continuing increase in solid cancer risks, the LSS should continue to provide important new information on radiation exposure and solid cancer risks for another 15 to 20 years and utilization of cancer registries is certain to become increasingly important in the future.

Kazunori Kodama

Occupational history:

1976-79 Resident, Department of Internal Medicine, Hospital of St. Raphael, Yale University School of Medicine, New Haven, Connecticut, USA
1979-81 Cardiology Fellow, Department of Cardiology, Hospital of St. Raphael, Yale University School of Medicine, New Haven, Connecticut, USA
1983-87 Lecturer, Division of Intensive Care Medicine, Hiroshima University Hospital
1989-99 Chief, Department of Clinical Studies, RERF
1999-2002 Professor, Department of Health Science, Institute of Health Sciences, Hiroshima University Faculty of Medicine
2002-2004 Chief, Department of Epidemiology, RERF
2004-2007 Chief Scientist, and Chief, Department of Epidemiology, RERF
2007- Chief Scientist, Radiation Effects Research Foundation (RERF)

Membership:

Japan Epidemiological Association (President: 2007-2010)
Japan Radiation Research Society (Councilor)
Japanese Society of Internal Medicine (Certified Physician)
Japanese Circulation Society (Certified Physician)
American College of Cardiology (Fellow)
Faculty of Public Health Medicine of the Royal Colleges of Physicians of the United Kingdom (Fellow)
International Epidemiological Association

Major activities:

Epidemiology of radiation health effects , Epidemiology of cardiovascular disease

Awards:

1992 Award for Prevention of Cardiovascular Disease (Japan Heart Foundation)

Other activities:

Visiting lecturer, Jichi Medical School, 1997 - present
Visiting lecturer, Kanazawa Medical School, 1999 - present
Member of Japanese Committee for the United Nations Scientific Committee on Effects of Atomic Radiation (UNSCEAR), 2003- present (Chairman: 2009-)
Correspondence member, WHO Radiation Emergency Medical Preparedness and Assistance Network (REMPAN), 2005-present
Councilor, Japan Heart Foundation, 2005-present
Expert advisor, Statistic Committee of Cabinet Office, 2008-2009
Expert advisor, Nuclear Safety Commission of Japan, 2009-
Expert advisor, Japanese Association of Medical Sciences, 2009-

O-1-06

**PATTERN OF SOLID TUMORS IN BASRAH AND SOUTHERN
IRAQ RESULTS OF HISTOPATHOLOGICAL REGISTRATION
2005-2008**

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Background

Cancer is growing problem world-wide and in Iraq. Accurate diagnosis is an essential component of successful cancer registration. Histopathological and cytological diagnosis remain the main method in the developing countries despite the development of other additional means.

Methods

A histopathological cancer registration was initiated in Basrah as part of a comprehensive control programme. In this registration almost all solid tumours ascertained by histopathological methods are registered. In this paper a summary of registration outcome is presented for the first four years of work.

Results

A total of 5865 cancer cases were verified and registered by the Cancer Registration Section (CRS) over the period 2005-2008. These represented almost 67% of all cancers registered in Basrah over the same years. Nearly 46.5% of the cases were in males and 53.5% were in females. Children aged less than 15 years represented nearly 5.9% of all solid tumour cases. The five leading cancers are those of breast, urinary bladder, NHL, skin and lung accounting for 45.1%.

Discussion

Cancer registration has improved in Basrah over the last few years. A significant contributor was the establishment of histopathological registry as an integral component of the population-based cancer registration in Basrah.

O-1-07

ANNUAL AGE-SPECIFIC RATES: WHAT THEY ADD IN OUR UNDERSTANDING ON CANCER RISKS

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CPO-Piedmont Cancer Registry, Italy

Background

The relationship between cancer incidence and age has been usually described with five-year age-groups. Grouping age in five years has been dictated by the need of obtaining stable rates, without loss of the underlying age-incidence shape. For most of the situation it has been proven acceptable, but when the incidence sharply changes within the 5 years, or across the age group boundaries, this shape is easily missed.

Methods

We analysed and presented three examples where annual age-specific rates are better suited for studying cancer incidence. The data for the proposed case-studies are from the Piedmont Cancer Registry. We computed annual age-specific rates, then we analysed the specific parameters of the age-incidence curve with specific functions, based on generalised linear models with a Poisson error.

Results

The first case study was drawn from breast cancer: Johannes Clemmensen, in the early '60s, described a peak followed by a subsequent short decline (the "hook") in the incidence rates around menopausal age. We detected a significant difference in incidence rates measured in three periods: before the implementation of our regional screening programme (1985-1991), with the hook peaking at age 48; during the first phase of organised screening (1992-1999), when the hook disappeared; and finally when the screening programme was mature, the prevalence phase was over, and use of HRT has declined (2000-2006), the hook reappeared but at a later age (50).

The second case study concerned prostate cancer. The modal age of incidence shifted from age 83 before the introduction of PSA testing to age 72 in 2000-2006. The last example was Hodgkin's disease where the bimodal shape of the age-incidence curve did not change over time, showing a first modal age at 14, and the last at 81.

Discussion

In conclusion, use of annual age-specific rates, with the appropriate mathematical function, proved to be suitable for analysing particular situations where traditional 5 year classes are too wide or misplaced.

O-1-08

**TRENDS OF MOUTH AND TONGUE CANCERS IN THE
POPULATION BASED CANCER REGISTRY OF BHOPAL,
INDIA**

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² Coordinating Unit National Cancer Registry Programme,
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Background

Population Based Cancer Registry Bhopal is under the network of the National Cancer Registry Programme (NCRP) of India. Across the country there are 29 registries working under NCRP. Over the years it has been observed that the proportions of mouth and tongue cancers reported by Bhopal registry are very high. An attempt was made to explore trends and pattern of the two cancers.

Methods

The cancer incidence data collected over the years (1988-2008) from Bhopal cancer registry was utilized. National comparison was done using the reports generated by the NCRP. The time trends in AAR of mouth and tongue cancer were assessed using the Joinpoint method. The data collected over tobacco chewing habits in the year 2005 was utilized.

Results

In the year 2008 the proportion of mouth and tongue cancers registered at Bhopal was 20% of all the cancers. According to the report generated by the NCRP for the years 2004-2005 proportion of the mouth cancer varied from (3.1% in Bangalore to 8.8% in Bhopal) while tongue cancer varied from (1.9 % in Barshi to 8.9% in Bhopal).

Over the years 1988 to 2008 the Age Adjusted Rate (AAR) of mouth cancers among males of Bhopal increased from 7.1/100,000 to 11.9/100,000, while for Tongue AAR increased from 8.0/100,000 to 11.8/100,000. Further during the same period the mean age of males having mouth cancer decreased from 56.6 years to 52.3, likewise for tongue cancer the mean age decreased from 56.3 years to 52.6 years. The AAR of Mouth (APC 2.76) and tongue (APC 1.69 from 1994) were found to be increasing significantly. Tobacco chewing among males in Bhopal is more prevalent than those in the other registry areas.

Discussion

With a definite shift towards the younger age a rising trend of mouth and tongue cancer was found among males of Bhopal (INDIA). High usage of tobacco chewing in Bhopal may be the underlying reason of this high proportion.

O-1-09

INVASIVE AND IN-SITU CERVICAL CANCER INCIDENCE TRENDS IN 1993-2006 IN IZMIR, TURKEY

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² Provincial Health Directorate, Turkey

Background

Unlike most developing countries, despite the fact that absence of the systematized screening programs, cervical cancer incidence is low in Izmir, Turkey. This might be attributed to the social-cultural aspects which have a consequence as low exposure to HPV. It might be expected an increase in cervical cancer incidence rates due to cultural and behavioral transition from traditional into western life style in recent decades in Turkey. The aim of this study is to see the incidence trends of invasive and in situ cervical cancer cases in Izmir.

Methods

Cervical cancer cases diagnosed between 1993 and 2006 were identified in Izmir Cancer Registry. Age-standardized incidence rates (WSP) of invasive and in situ cervical cancer cases were calculated per 100 000 for each calendar year in Izmir.

Results

We pooled total 1338 invasive cervical cancer cases and 244 in situ cases between 1993-2006 period. ASRs were 5.5, 5.3, 5.0, 5.5, 5.8 per 100 000 in 1993, 1997, 2001, 2004, 2006 respectively. ASRs for in situ cases were 0.6, 0.7, 1.4, 1.6, 2.2 per 100 000 for the same years respectively.

Discussion

While a significant change in ASRs of invasive cervical cancer did not occur between 1993-2006 period, ASRs of in situ cases increased apparently in the same years. Although there is not any available provincial mass screening program for cervical screening in Izmir, we have enough evidence for enhancing the opportunistic screening due to increased public awareness and the increased use of health care services as a result of health care system transition in Turkey. Therefore we might have an interpretation that an expected increase in cervical cancer incidence in Izmir due to the life style changes is veiled by the increased opportunistic screening activities in Izmir.

O-1-10

INCIDENCE OF OESOPHAGEALCANCERS IN SRI LANKA: EVIDENCE FROM SRI LANKAN CANCER REGISTRY 1985 - 2005

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³ National Cancer Institute, Sri Lanka

Background

Hospital based cancer registry is the only cancer surveillance mechanism in Sri Lanka. Seven editions of cancer registries were published covering cancer incidence data of all government cancer treatment centres from 1985 to 2005. ICD-10 was used till 1995 and ICD-O is used from year 2000 onwards for disease classification. Till 2005, radiotherapy facilities were not available in the private sector, therefore almost all the cancer patients in Sri Lanka registered at government cancer treatment centres for cancer care.

Methods

Cancer incidence data related to oesophageal cancer available in cancer registry data base was explored to identify epidemiological trends.

Results

Throughout the 20 year period oesophageal cancer was among the first five commonly occurring cancers among both males and females in each year. In the year 1985, 441 new cases were reported (males -195, females -246) while in 2005 it was 1021 (males -498, females -524). In the year 1985 age standardized incidence rate was 4.1 per 100,000 population while in the year 2005 it was 5.6. Incidence among females was higher than males throughout the period. Highest incidence of cancers was observed in year 60-69 age group in both sexes during the 2000 to 2005 time period. Site of the oesophageal cancer was not able to extract from more than 60% of clinical records during the 2000-2005 time period and highest percentage of cancers were reported from middle third of oesophagus among the records with site mentioned. According to the histology squamous cell carcinoma was the commonest type throughout the period. The relative percentage of adenocarcinoma was gradually increased from year 2000 to 2005 in both sexes.

Discussion

Oesophageal cancer is a leading cancer in both sexes in Sri Lanka with increasing incidence with time. The percentage of adenocarcinoma is increasing with time on par with western world and it may be related to life style changes.

Key Note Lecture for Scientific Session 4

ATTRIBUTABLE CAUSES OF STOMACH AND ESOPHAGEAL CANCER IN CHINA – AN EXAMPLE OF USING CANCER REGISTRY AND POPULATION EXPOSURE DATA TO EVALUATE CANCER RISK FACTORS FOR MAKING NATIONAL CANCER PREVENTION PROGRAM



You-Lin Qiao

Cancer Institute, Chinese Academy of Medical Sciences, China

Background

The stomach and esophageal cancers account for 29.4% of total cancer death in China. A large number of agents have been classified as human cancer risk factors by WHO/IARC. Most previous studies of attributable fraction of cancers have been conducted in Europe and USA, while few studies in Asian countries.

Objectives:

To estimate the contribution of known risk factors of stomach and esophageal cancers in China and provide evidence to make the National Cancer Prevention and Control Program in China (2010-2020).

Methods

Esophageal and stomach cancer incidence and mortality were come from population-based cancer registries and the 3rd national mortality survey in China. We calculated the proportion of esophageal and stomach cancers attributable to specific risk factors [population attributable fraction (PAF)]. For avoidable risk factors (smoking): PAF was calculated based on the assumption of total avoidance of risk factor. For some risk factors (low vegetable and fruit intake), zero exposure was inappropriate, we estimated the fraction of cancer that would not have occurred under an alternative scenario of referenced level or frequency. Exposed data on smoking, alcohol drinking, H pylori and low vegetable/ fruit intake were from Meta-analysis and large scale national surveys of representative samples of Chinese population. Data on relative risks were derived from the Meta-analysis and large scale prospective studies.

Results

We estimated that a total of 87,065 esophageal cancer deaths (men: 67,686; women: 19,379) and 108,205 cases (men: 83,967, women: 24,238) were attributable to the known risk factors in China in 2005, including smoking, alcohol drinking low vegetable intake and low fruit intake. About 71.9% of cardia stomach cancer among men and 60.8% among women were attributable to smoking, H pylori and low vegetable intake and low fruit intake. Smoking, H pylori and low vegetable intake and low fruit intake were responsible for 88.3% of noncardia stomach among men and 82.2% among women.

Discussion

In Chinese population, smoking, alcohol drinking and low vegetable intake and low fruit intake are responsible for 51% of esophageal cancer mortality or incidence among men and 33% among women. Most cardia/noncardia stomach cancer mortality or incidence are caused by smoking, H pylori and low vegetable intake and low fruit intake in Chinese population.

You-Lin Qiao

Professor and Director

Department of Cancer Epidemiology, Cancer Institute,
Chinese Academy of Medical Sciences and Peking Union Medical College
Beijing, China

Education/History

You-Lin Qiao received his Medical Diploma from Sichuan Medical College, Chengdu, China and his Master's Degree in Medicine from Dalian Medical College. His doctoral degree in Environmental Health Sciences is from The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland. He has also trained and worked at the Cancer Prevention Studies Branch, National Cancer Institute, National Institutes of Health, USA.

Publications/Editorial Experience

Dr. Qiao serves as a member of editorial boards of several Chinese and international peer-reviewed journals. He is an author of more than 200 publications in peer-reviewed journals and books.

Awards

Dr. Qiao has received several national and international scientific awards, including the EUROGIN International Award, The Cornelius W. Kruse Award, and the Excellent Achievement Award on Medical/Public Health Service in China.

Current Position/Responsibilities

Dr. Qiao is professor and the director of the Department of Cancer Epidemiology at the Cancer Institute/Hospital, Chinese Academy of Medical Sciences and Peking Medical College in Beijing, China. He is also a deputy secretary general and director of International Collaboration Department, Cancer Foundation of China, and Deputy Director of the National Consortium of Cervical Cancer Prevention and Control in China. He is a member of the Working Group on the Evaluation of Carcinogenic Risks in Humans for the International Agency for Research on Cancer. As an expert in cancer prevention and control, he serves as a Member of Cancer Control Advisory Committee to the Director-General of WHO, the member of several WHO technical advisory groups and committees for helping to promote cancer prevention and control programs in developing countries.

Dr. Qiao is involved in many national and international projects to study etiology, primary intervention, and early detection of a variety of cancers through multidisciplinary and global collaborations.

O-4-01

PRONOSTIC FACTORS FOR SURVIVAL IN LOCALLY ADVANCED BREAST CANCER AT THE NATIONAL CANCER INSTITUTE OF MEXICO 2004 - 2008

Pedro Rizo, Jesus Alva, Gabriela Vazquez, Emilio Mille,
Abelardo Meneses, Alejandro Mohar

Hospital-Based Cancer Registry, National Cancer Institute of Mexico, Mexico

Background

During the last decades in Mexico like in many others countries breast cancer has increased significantly, despite better diagnostic, early detection programs, better treatments and more knowledge about risk factors. In Mexico, breast cancer has also shown an increase in the indicators of health, the incidence estimated is 38.4 per 100 000 women, and standardized mortality rates has increased twice in the last 20 years (12.2 deaths per 100 000 women). The objective of this study was to analyze the prognostic factors and survival from Locally Advanced Breast Cancer in women that seek medical care at the National Cancer Institute of Mexico.

Methods

We reviewed 1819 clinical files from the Hospital Based Cancer Registry at the INCan with histological diagnosis of Locally Advanced Breast Cancer from 2004 to 2008 to assess survival by Kaplan-Meier and Cox proportional hazards.

Results

Overall 5-year survival was 76%. The shortest survival rate correspond to Karnofsky score (less than 80, 51.1%), metastasis 54.9%, clinical stage (IIIC 58.3%), age group (24-34 years old 64.0%), Her2Neu (negative 70.2%) nuclear grade (grade high 70.4%), tumor location (across breast 70.5%), tumor size (greater than 5 cm 70.5%) hormone receptor (negative 72.5%), body mass index (obesity grade II 73.9%),.. The proportional hazards model were: Karnofsky score 80 (RR=3.94, CI95%=2.37-6.56), tumor location across breast (RR=2.16, CI95%=1.04-4.48), clinical stage IIIA (RR=1.76, CI95%=1.15-2.68), clinical stage IIIB (RR=3.69, CI95%=2.49-5.48), clinical stage IIIC (RR=4.48, CI95%=2.74-7.33), metastasis (RR=2.57, CI95%=1.80-3.65), high nuclear grade (RR=1.74, CI95%=1.08-2.82) and hormone receptor negative (RR=1.91, CI95%=1.40-2.61).

Discussion

Breast cancer is major public health problem in Mexico. The response to this epidemic should be health education and optimize access to early detection by clinical examination and mammography in countries with few resources and with high incidence breast cancer.

O-4-02

A BLADDER CANCER GENOME-WIDE ASSOCIATION STUDY USING THE CANCER REGISTRY INFRASTRUCTURE

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Radboud University Nijmegen Medical Centre & Comprehensive Cancer Centre East, Netherlands

Background

Since 2007, huge developments have taken place in research into lower penetrance susceptibility of cancer. The completion of the Human Genome project and the HapMap project, and the commercial availability of reasonably affordable high-resolution DNA marker chips have made it possible to conduct large-scale case-control studies in which the genome is screened for markers that are associated with the risk of cancer. The weakest link in this research has become the availability of large series of cases and controls for which genomic DNA is available. In the cancer registration region of the Comprehensive Cancer Center East, The Netherlands, we have built an infrastructure to collect DNA from large series of cancer patients.

Methods

Patients with cancer at specific tumor sites are selected from the cancer registry. The patients who are still alive are being invited by the cancer registry in the name of the treating physicians. In case of informed consent, postal questionnaires are being sent to the patients by the cancer registry. Also, visits are arranged to one of several regional Thrombosis Service Centers for a blood draw. The blood samples are transported to a central biorepository. DNA is isolated for genotyping.

Results

In the last few years, more than 6000 patients have been recruited for these studies. In one of the studies on 1600 patients with bladder cancer, several new genetic susceptibility loci for bladder cancer were discovered and replicated in several additional case-control series from Europe (see Kiemeney et al. Nat Genet 2010; 42(5): 415-9). In the presentation, both the research infrastructure and the results of the bladder cancer study will be explained.

Discussion

The cancer registry has been proven to be an excellent study base for studies into polygenic inheritance of cancer. Not only for the selection of patients but also for the logistical organization of such studies. It is anticipated that the next step in these studies will be the research into genomic variants of prognosis and therapy response (i.e. pharmacogenetics). The role of the cancer registry will be even more important in these studies.

O-4-03

POSITIVE ASSOCIATION BETWEEN GREEN TEA CONSUMPTION AND RISK FOR UPPER AERODIGESTIVE TRACT CANCER IN JAPANESE POPULATION

Isao Oze, Keitaro Matsuo, Satoyo Hosono, Miki Watanabe, Hidemi Ito,
Kazuo Tajima, Hideo Tanaka

Division of Epidemiology and Prevention, Aichi Cancer Center Research Institute, Japan

Background

Hot beverage or food consumption such as mate tea in Latin America or tea gruel (cha-gayu) in some part of Japan is considered as the possible risk factor for upper aerodigestive tract (UAT) cancer. Green tea is the most common hot beverage in Japan; however, the association between these consumption and UAT cancer risk has been inconsistent. Then, we conducted a case-control study to assess the association between green tea consumption and UAT cancer.

Methods

Subjects were 961 UAT cancer cases (head and neck cancer in 1581 and esophageal cancer in 1302) and 2883 age and sex matched controls between January 2001 and December 2005 at Aichi Cancer Center Hospital. Information on green tea consumption and other lifestyle factors were obtained via self-administered questionnaire. Association between green tea consumption and UAT cancer was assessed by odds ratios (ORs) and 95% confidence intervals (CIs) by using conditional logistic regression models.

Results

Green tea consumption showed significant positive association with UAT cancer overall (p-trend=0.011). The OR was 1.26 (1.04-1.53) among subjects who consumed 3 cups or more a day. Association was clear in head and neck cancer, but less clear in esophageal cancer. The association was significant among never drinkers, although others showed similar trend.

Discussion

In conclusion, we found the positive association between green tea consumption and UAT cancer risk. Further epidemiologic and biologic studies are warranted.

O-4-04

SUICIDAL DEATH AMONG LONG-TERM SURVIVORS OF CHILDHOOD CANCER IN KOREA

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Division of Cancer Registration & Surveillance, National Cancer Center,
The Korea Central Registry, Korea

Background

Improvements in therapies for childhood cancer over the last four decades have resulted in significant increases in 5-year survival rates for most malignancies. Although many studies of childhood cancer survivors suggest that they have higher mortality rates than the general population, it is controversial whether mortality from suicide is higher or not. We investigated whether the suicide rate exceeded that of the general population.

Methods

We merged national cancer registry data and national death registration data to determine the suicidal death of 7,519 people who were diagnosed with cancer from 1993 to 2003 before age 14 years and survival for 5 years after diagnosis. We calculated standardized mortality ratios (SMRs) by an indirect standardization method.

Results

Of the patient population, 6 had died because of suicide by December, 2008. The risk for suicidal death was significantly higher than the general population. Survivors had an elevated suicide rate (SMR, 2.44; 95% CI, 1.10-5.42).

Discussion

Appropriate mental and social attention for long-term childhood cancer survivors is warranted to prevent premature deaths from suicidal cause.

Key Note Lecture for Scientific Session 5

MOLECULAR TRACING OF THE GLOBAL HEPATITIS C VIRUS EPIDEMIC PREDICTS REGIONAL PATTERNS OF HEPATOCELLULAR CARCINOMA MORTALITY

Masashi Mizokami



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The molecular clock theory has successfully estimated the spread time of hepatitis C virus (HCV) in the 1930's in Japan 30 years earlier than that in the US in the 1960's, predicting that an increased hepatocellular carcinoma (HCC) prevalence will occur in the US over the next 2-3 decades. The molecular evolutionary analysis based on coalescent theory can provide important insights into epidemiological processes worldwide. To estimate HCV spread time worldwide, we combined with analyses of the HCV epidemiological-historical background and HCV-related HCC in different countries worldwide. The HCV gene sequences of 131 genotype 1b (HCV-1b) strains from Japan, 38 HCV-1a from the USA, 33 HCV-1b from Spain, 27 HCV-3a from the former Soviet Union (FSU), 47 HCV-4a from Egypt, 25 HCV-5a from South Africa (SA), and 24 HCV-6a from Hong Kong (HKG) isolated in this and previous studies were analyzed. Sequences in the NS5B regions were determined directly and the molecular evolutionary analysis based on the coalescent theory was applied to HCV isolates of each genotype. The coalescent analysis indicated that a transition from constant size to rapid exponential growth (spread time) occurred in Japan in the 1920s (HCV-1b), but not until the 1940s for the same genotype in Spain and other European countries. The spread time of HCV-1a in the USA was estimated to be in the 1960s, HCV-3a in the FSU, HCV-5a in SA, and HCV-6a in HKG in the 1960s, mid 1950s, and late 1970s, respectively. Three different linear progression curves were determined by analysis of the relationship between HCV seroprevalence and HCC mortality in different geographic regions; a steep ascent indicated the greatest progression to HCC in Japan, a near horizontal line indicated the least progression in the USA and FSU, and an intermediate slope was observed in Europe. These findings strongly suggest that the initial spread time of HCV is associated with the progression dynamics of HCC in each area, irrespective of genotype.

Masashi Mizokami

Director General, Research Center for Hepatitis and immunology, National Center for Global Health and Medicine.

1971-1976	Nagoya City University Medical School.
1981-1983	Gastroenterologist, Gastroenterology, Chukyo Hospital.
1983-1985	Researcher under Prof. Gojoibori, National Institute of Genetis.
1983-1989	Assistant Professor, Nagoya City University Medical School.
1990-1991	Clinical Research Fellow, Liver Unit, King's College Hospital.
1998-1999	Associate Professor, Nagoya City University Medical School.
2000-2008	Director and Professor, Department of Clinical and Molecular Informative Medicine, Nagoya city University Graduate School of Medical Sciences.
2009-2010	Director General, Research Center for Hepatitis and Immunology, International Medical Center of Japan.
2010-present	Director General, Research Center for Hepatitis and Immunology, National Center for Global Health and Medicine.

O-1-11

EDUCATION, SURVIVAL AND AVOIDABLE DEATHS IN CANCER PATIENTS IN FINLAND

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² Department of Sociology, University of Helsinki, Finland

³ Cancer Society of Finland, Finland

Background

Relative survival after cancer in Finland is at the highest level observed in Europe and has in general been in a steady increase. The aim of this study is to assess whether the high survival is equally shared by different population subgroups and to estimate the possible gains that might be achieved if equity prevailed.

Methods

The educational level and occupation prior to the cancer diagnosis of cancer patients diagnosed in Finland in 1971-2005 was derived from an antecedent population census. Cause-specific and relative five-year survival figures were calculated for population categories based on these variables. Numbers and proportions of avoidable deaths were derived under the assumption that the patients from two lower educational categories would have the same mortality due to cancer as those from the highest educational category. Moreover, estimates were made also on an additional assumption of equally high mortalities due to other causes of death in all of the three categories.

Results

For almost all 25 cancer sites considered in this study and both sexes the survival was consistently highest for patients with highest education and lowest for those with basic education only. Patients in health-consciousness-related occupations (physician, nurse, teacher etc.) had an even higher survival. A part of the differences was attributable to a less favourable distribution of tumour stages in the lower education categories. In 1996-2005, 4-7% of the deaths in the Finnish cancer patients could be avoided during the first five-year period after diagnosis, should all the patients have the same cancer mortality as the patients with the highest educational background. The proportion would be much higher, 8-11%, if also the mortality from other causes were the same as that in the highest educational category.

Discussion

Higher cancer patient survival among the highest educated may be related to differences in personal habits and ways of life but it is also related to an earlier cancer diagnosis. Ability to cope within the health care system may also be relevant.

O-1-12

SOCIOECONOMIC INEQUALITIES IN CANCER SURVIVAL IN ENGLAND AFTER THE NHS CANCER PLAN

Libby Ellis, Bernard Rachet, Camille Maringe, Michel P Coleman

London School of Hygiene and Tropical Medicine, UK

Background

Inequalities in survival have been reported for most adult cancers in England. The NHS Cancer Plan (2000) outlined the Government strategy to improve cancer survival and reduce socio-economic inequalities in survival. Recent observations suggest that some improvements in survival have accelerated since implementation of the Cancer Plan. This study uses National Cancer Registry data to assess the impact of the Cancer Plan in tackling inequalities in survival.

Methods

We examined population-based data for all adults diagnosed with one of 21 common cancers in England during 1996-2006 and followed up to 2007. We defined a priori three calendar periods of diagnosis in relation to the Cancer Plan: 1996-2000 (before the Cancer Plan), 2001-03 (initialisation) and 2004-06 (implementation). One-year relative survival by sex and socio-economic group was estimated using a maximum-likelihood approach for each calendar year. The 'deprivation gap' (the difference between survival in the most deprived and most affluent groups) was estimated with variance-weighted linear regression. Changes in the deprivation gap within and between the three calendar periods were also examined.

Results

For patients diagnosed during 1996, 1-year survival in the more deprived groups was lower than the more affluent for 34 of the 35 cancer-sex combinations examined (27 significant at 5%). The figure was very similar a decade later, with lower survival in the more deprived groups for 32 of the 35 cancer-sex combinations (23 significant at 5%). Overall, between 1996 and 2006, the deprivation gap narrowed for 21 cancer-sex combinations, and widened for 14.

Discussion

For most cancers, the deprivation gap in survival has changed very little since the introduction of the NHS Cancer Plan. Despite small reductions in the deprivation gap for some cancers, there was no obvious acceleration in the reduction since the NHS Cancer Plan. Inequalities in cancer survival were still large for many cancers in 2006.

O-1-13

BREAST CANCER INCIDENCE, INCIDENCE TRENDS, AND SURVIVAL IN METRO MANILA AND RIZAL PROVINCE, PHILIPPINES

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Maria Theresa M Redaniel¹, Victoria M Medina¹, Gemma B Uy²

¹ Philippine Cancer Society - Manila Cancer Registry, Philippines

² Department of Surgery, Philippine General Hospital, University of the Philippines Manila

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⁵ Department of Surgery - Rizal Medical Center, Philippines

Background

Breast cancer incidence in some areas in the Philippines is among the highest observed in Asia, but survival remains to be lower compared to High Income Countries. The combined databases of two population-based registries, Philippine Cancer Society-Manila Cancer Registry and Department of Health-Rizal Cancer Registry, had provided the essential data for cancer control in the country.

Methods

Both registries used active registration, seeking cases in 172 hospitals in 30 cities/municipalities with a combined population of almost 12 million (2000 Census). Age-standardized rates (ASR) were computed using the World Standard Population. Incidence trends were derived using joinpoint regression analysis. 5-year relative survival rates (RSR) of two sets of survival cohorts were computed using population-specific life tables.

Results

Significantly higher ASRs were observed in 7 cities/municipalities (56 to 76/100,000), while significantly lower ASRs occurred in some rural areas ranged from 8 to 19/100,000. Overall ASRs have been steadily rising, with an annual average percentage change of 0.9% during 1980-2002. 5-year RSR for Metro Manila residents was 59%, lower than Filipino-Americans (90%) and Whites (88%) in the United States, and Europeans (79%). For residents of both Metro Manila and Rizal Province, 5-year RSR decreased to 47%, higher than Gambia (12%), similar to Uganda (46%) and India (52%), lower than China (82%), Saudi Arabia (64%), Singapore (76%), South Korea (79%), Thailand (63%), Turkey (77%) and Costa Rica (70%).

Discussion

Increasing incidence is mainly attributed to unhealthy lifestyles - unhealthy diet, physical inactivity, smoking/passive smoking and perhaps alcohol consumption. Changes in reproductive behavior may also be important. TNM Stage III - IV comprised 41% of known stages during the 1993-2002. Delayed diagnosis/treatment seems to be due mainly to socioeconomic factors rather than lack of awareness.

O-1-14

IMPACT OF COMORBIDITY IN GASTRIC CANCER SURVIVAL IN ZARAGOZA

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J. Tomas Alcala^{2,4}, Federico Arribas^{2,3}, M. Jose Rabanaque^{2,4}

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Background

The gastric cancer is the fifth most common cancer in Zaragoza. It is known that the survival is quite low in this cancer. It is predominantly a disease of the elderly and many patients have comorbid diseases at diagnosis of gastric cancer. The presence of this comorbidity could have a negative impact on prognosis and survival. A population-based study has been carried out to identify the impact of comorbidity in survival in patients with gastric cancer diagnosed in 2004 among residents in Zaragoza.

Methods

All primary gastric cancers (excluding lymphoma) among resident in Zaragoza and diagnosed in 2004 were obtained from the Zaragoza population-based Cancer Registry. Comorbidity information up to four year before gastric cancer diagnosis was extracted from Aragon hospital discharge registry. The Deyo's adaptation of the Charlson comorbidity score was used as comorbidity measure and calculated for each patient. Gastric cancer diagnoses were not included when computing the Charlson score. The end of the follow-up was the 31 October 2008. Kaplan-Mayer method was used to estimate observed survival and the log Rank for curve comparison. Cox proportional hazard regression was applied to estimate the impact of comorbidity adjusted by age group, sex and residence of the patient.

Results

A total of 175 cases were registered. 21 cases were excluded (3 lymphoma, 13 DCO and 5 second primary multiple tumours). So, 154 cases of gastric cancer were including in the analysis. Hospital discharge records were not found for 11 of theses patients. No statistical significant differences were found in survival between cases with hospital discharges and not hospital discharges. The 3-year survival for patients with Charlson score 5-10 was 14%, for patients with Charlson score 1-5 was 26% and for patients without comorbidity 39%. These survival differences remain when an adjusted by age group, sex and residence of patient is made.

Discussion

Theses results suggest that patients with comorbidity (measured as Charlson score) at diagnosis have worse prognosis than those without comorbidity. Although extension of tumour was not available, the Charlson score has in account the presence of metastasis in the patient.

Key Note Lecture for Scientific Session 6

THE CURRENT AND FUTURE GLOBAL CANCER BURDEN

Freddie Bray

Section of Cancer Information, International Agency for Research on Cancer, France



This presentation aims to i) highlight some of the key global cancer patterns in 2008 and ii) discuss the joint impact of changing demographics and changing cancer risk on the expected cancer burden by 2030, based on results from GLOBOCAN 2008 and Volumes I-XI of *Cancer Incidence in Five Continents* (CI5).

GLOBOCAN 2008 (<http://globocan.iarc.fr>), provides worldwide estimates of the numbers of new cases of, and deaths from cancer. An estimated 12.7 million new cancer cases and 7.6 million cancer deaths were estimated to have occurred in 2008, with 56% of new cancer cases and 63% of the cancer deaths in the less developed regions of the world. The most commonly diagnosed cancers globally are lung (1.61 million, 12.7% of the total), breast (1.38 million, 10.9%) colorectal (1.23 million, 9.7%), stomach (989 000, 7.8%), prostate (913 000, 7.2%) and liver (748 000, 5.9%). In men, cancer occurs most often in lung (ASR, age-standardised rate 34.0 per 100,000 men), prostate (ASR 28.5) and colorectum (ASR 20.4), while in women the most frequent cancers are of the breast (ASR 39.0 per 100,000 women), cervix uteri (ASR 15.2), colorectum (ASR 14.6) and lung (ASR 13.5). Evidently there are striking differences in the patterns of cancer from region to region, with, for instance, cervix and liver cancers more common in developing areas, and prostate and colorectal cancers more common in developed areas. Such large geographical variations in the rates of common cancers, and the varying cancer profiles according to level of resource, will be emphasised in the presentation.

Accurate predictions benefit health planners attempting to optimize resources. In communicating future predictions of cancer burden, it is important to make a distinction between changes owing to the demography of the world population, and changes owing to a changing risk pattern over time. In terms of the former, the continuing growth and ageing of the world's population means that, even with current rates of incidence and mortality, the burden of cancer will continue to increase. The global population will reach 7 billion by 2012 and 8.3 billion by 2030, and assuming rates in 2008 do not change, we can estimate that approximately 21.4 million new cases will be diagnosed in 2030 and 13.2 million deaths from cancer will occur.

Already the majority of the global cancer burden now occurs in developing countries, and these proportions will rise in the next decades were rates to remain unchanged given population growth and ageing; there will be four times more persons in developing regions in 2030 compared with 1950 and 10 times more persons aged over 65. Changing incidence rates will also have a large influence; and it is evident from the temporal data from CI5 that changes in lifestyle (including tobacco and alcohol consumption, nutritional habits, physical activity) added to pre-existing risk factors (especially cancer-related infections) will produce dramatic changes in the burden of cancer in forthcoming years, particularly in developing areas. Several examples will be given.

The presentation will end by briefly describing ongoing work at IARC, including analyses of incidence stratified by the Human Development Index, and preliminary plans to provide more informative incidence predictions based on realistic scenarios for cancer control through primary prevention and early detection interventions.

Freddie Ian Bray

Recent appointments

Mar 2005 - Mar 2010	Leader, Research Section, Dept of Clinical and Registry-based Research Institute of Population-Based Cancer Research, Oslo, Norway
Jan 2007 - Mar 2010	Researcher, Department of Biostatistics, University of Oslo, Norway
Oct 1998 - Feb 05	Scientist, Unit of Descriptive Epidemiology, IARC, Lyon, France

Current and recent duties (2005-)

- General Secretary, International Association of Cancer Registries (2008-)
- Member, European Network of Cancer Registries Steering Committee (2005-)
- Chair, European Network of Cancer Registries Steering Committee (2007-9)
- Editor-in-Chief, *Cancer in Norway* (annual incidence report 2006-2009)
- Editorial Board, *Cancer Epidemiology* (2009-)

Selected teaching (2006-)

- Teaching Faculty, IACR Summer School on Cancer Epidemiology, IARC, Lyon, 2010-
- Teaching Faculty, Essentials of descriptive cancer epidemiology, Karolinska Institute, Stockholm, 2010.
- Teaching Faculty, Advanced Statistics, University of Oslo, Oslo, 2006-9.
- Teaching Faculty, Cancer Predictions, Tata Memorial Hospital, Mumbai, 2008
- Teaching Faculty, Uses of Registries, University of Copenhagen, Copenhagen, 2008
- Teaching Faculty, PhD Summer School, Tampere School of Public Health, Tampere, 2006, 2008
- Teaching Faculty, ENCR Cancer Predictions, IARC, Lyon, September 2006

O-3-01

UPDATES TO ICD-O AFFECTING INCIDENCE RATES IN POPULATION-BASED REGISTRIES

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² Section of Cancer Information, International Agency for Research on Cancer, France

³ Molecular Pathology Section, International Agency for Research on Cancer, France

Background

The *International Classification of Diseases for Oncology, third edition* (ICD-O-3) was published in 2000 and, with the exception of some errata, has not been revised for almost a decade. Since the publication of ICD-O-3, several volumes of the *World Health Organization Classification of Tumours* series have been revised and updated with descriptions of newly identified tumour entities. The volumes on *Tumours of the Central Nervous System* (2007) and *Tumours of the Haematopoietic and Lymphoid Tissues* (2008) were published with proposed ICD-O-3 codes for the new tumour entities. A third volume (gastrointestinal tract tumours) is scheduled for publication in the fall of 2010, and additional volumes in the WHO Classification series are under development. As clinicians and pathologists use these references to identify and report new cancers, the diagnoses and proposed ICD-O-3 histology codes will be included in population-based registries.

Results

In March, 2010, the IARC/WHO Committee for the International Classification of Diseases for Oncology met to discuss updates to the third edition of ICD-O. The committee was composed of the editors of ICD-O-3, editors of the WHO Classification of Tumours, representatives of WHO and the International Agency for Research on Cancer, and expert specialist pathologists. The committee approved new terms and codes for central nervous system tumours and over 30 new malignant haematopoietic and lymphoid neoplasms and codes. Several new terms were approved for neoplasms of the gastrointestinal tract, most of which were added to existing ICD-O-3 histology codes.

Discussion

This presentation will discuss some of the potential issues population-based registries may incur in identifying and coding these new entities, such as how to assign the disease group for the new lymphoma/leukaemia codes. The proposed schedule for updating ICD-O-3 will also be outlined.

O-3-02

MODELLING RELATIVE SURVIVAL IN THE PRESENCE OF INCOMPLETE DATA: A TUTORIAL

Ula Nur¹, Lorraine Shack², Bernard Rachet¹, James Carpenter³, Michel Coleman¹

¹ London School of Hygiene and Tropical Medicine, UK

² North West Cancer Intelligence Service, Christie Hospital NHS, UK

³ Medical Statistics Unit, London School of Hygiene and Tropical Medicine, UK

Background

Missing data frequently create problems in the analysis of population-based data sets, such as those collected by cancer registries. Restriction of analysis to records with complete data may yield inferences that are substantially different from those that would have been obtained had no data been missing. 'Naive' methods for handling missing data, such as restriction of the analysis to complete records or creation of a 'missing' category, have drawbacks that can invalidate conclusions. We offer a tutorial on modern methods for handling missing data in relative survival analysis.

Methods

We estimated relative survival for 29563 colorectal cancer patients who were diagnosed between 1997-2004 and registered in the North West Cancer Intelligence Service. The method of multiple imputation (MI) was applied to account for the common example of incomplete stage at diagnosis, under the missing at random assumption. Multivariable regression with a generalized linear model and Poisson error structure was then used to estimate the excess hazard of death of the colorectal cancer patients, over the background mortality, adjusting for significant predictors of mortality.

Results

Incomplete information on stage, morphology and grade meant that only 55% of the data could be included in the 'complete-case' analysis. All cases could be included after indicator method (IM) or MI method. Handling missing data by MI produced a significantly lower estimate of the excess mortality for stage, morphology and grade, when compared with the results of complete-case analysis.

Discussion

In complete-case analysis, almost 50% of the information could not be included, and with the IM, all records with missing values for stage were combined into a single 'missing' category. We show that MI methods greatly improved the results by exploiting all the information in the incomplete records. This method also helped to ensure efficient inferences about survival were made from the multivariate regression analyses.

O-3-03

MODELING OF POPULATION-BASED CANCER REGISTRY IN JAKARTA, INDONESIA

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Background

Cancer become 7th cause of Death in Indonesia in 2007. There is no national both cancer incidence and mortality. Even though there were some population and hospital-based cancer registry in the past, started in 1970. But, unfortunately these were stopped because of no national organizer to organize it.

Established in 2006, Sub Directorate of Cancer Control has responsibility to develop national cancer control program, including surveillance of cancer. With collaboration with other parties, since 2007 we have been developing hospital-based cancer registry in Jakarta. By 2010, we are developing population-based cancer registry in Jakarta, extending from existing hospital-based. This project has got support from Minister of Health by issuing Minister Decree as legal aspect. This will also become a model before its development in other areas in Indonesia.

Methods

Method of data collection is passive collection from data sources by holding meeting every 3 months in municipality. Data verification is done by MD and pathologist, including suspicious cases. Data validation is done by team of cancer registration in municipality and province. We combine data from hospital-based and other facilities at province. Data management and analyze is done by team of cancer registry at province level assisted by national team. Sources of data are Primary Health Care, clinics, laboratories, insurance, municipal government, and hospitals.

Activities of development of Population Based in Jakarta are 1) Establishment of national team of cancer registry, including expert group, 2) Identification of data sources in Jakarta, 3) Review of software and forms (from hospital-based software and form), 4) Advocacy meeting at province level, 5) Socialization at municipality level, 6) Establishment of province and municipality team of cancer registry, 7) Training of cancer registry, 8) Actuation : data collecting, verification, management, analyze, 9) Monitoring and technical assistance, and 10) Evaluation.

Results

Result of the population-based cancer registry will be got in 2011. We are now developing the system first. But, result of hospital-based cancer registry from 32 hospitals (2005-2007) shows that the leading cancer among females are breast cancer (32.31%), cervical cancer (16.48%), ovarium cancer (6.97%), leukemia (4.51%), and thyroid cancer (3.76%). The leading cancer in males are bronchus and lung cancer (12.82%), pharynx (9.86%), leukemia (9.19%), prostate cancer (5.93%), colon cancer (5.84%).

Discussion

We need to know other country method in developing population-based cancer registry.

O-3-04

GEOGRAPHIC DISPARITIES OF EARLY DETECTION OF CANCER IN OSAKA PREFECTURE, JAPAN

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Background

Considering that diagnosing cancer at early stages may reduce risks of cancer deaths, it is expected that the geographic variation in successful early detection rates of cancers provides clues to understand the cancer 'postcode lottery', geographic disparity of cancer treatment and survival risks across regions reflecting socio-economic spatial inequalities. We explore the geographical disparities of early detection through mapping and associating them with regional deprivation in Osaka Prefecture, Japan.

Methods

The dataset of registered cancer cases from 2000-2004 are aggregated into 3163 small regions called 'cho' by their places of residence. Regarding the proportion of the localized stage (ProLS) as the indicator of early detection, we apply Bayesian smoothing and cluster detection (spatial scan statistics) techniques to it to extract distributional features of ProLS by site. The areal dataset are then grouped into five equal-sized populations by the order of areal deprivation score, a composite indicator of census variables, and then assess the inter-quintiles differences in ProLS.

Results

Mapping and cluster detection results indicate socio-economic disparities of early detection: white-collar suburbs tend to have higher proportions of early detection while inner city or industrial parts shows the opposite tendency. The negative associations between the early detection rate and degree of areal deprivation are confirmed for most of sites. For example, ProLS of cervical cancer for the least deprived quintile is 0.75 while that for the most deprived one is 0.66.

Discussion

We confirmed the socio-economic geographic disparity of early detection of cancers graded by regional deprivation. Our results may suggest priority areas for education to promote early diagnosis and screening at the small areal unit. We need further analysis linked to cancer survival rates to comprehend the postcode lottery in Osaka.

O-3-05

AREA-BASED HEALTH INEQUALITIES IN CANCER INCIDENCE AND MORTALITY IN KOREA: MULTI-LEVEL MODELING APPROACH

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Background

Cancer is the number one cause of death in Korea and the cancer burden will become larger in the upcoming years. There exist differences in cancer incidence and mortality in various geographic areas of Korea and it is important to study these differences in association with social inequalities at the area level. In order to correctly estimate the true differences by areas, the individual level effect should be appropriately controlled. In this study, we simultaneously considered area- and individual-level effects, in terms of socioeconomic position and deprivation, to explain the differences in cancer incidence and mortality rates across small areas in Korea.

Methods

We used the cancer incidence data in 2001-2005 from The Korea Central Cancer Registry and the cancer death data in 1993-2007 from Korean National Statistical Office. The geographical area in South Korea was divided into 220 small areas ("si-gun-gu" in Korean). We conducted the multilevel analysis to investigate the inequalities in cancer incidence and mortality across areas with different levels of deprivation, while adjusting for the differences existing at the individual level. Material deprivation index for each of 220 areas was constructed using 5 variables (household overcrowding, proportion of household head in low social class, non house ownership, male unemployment, lack of residential institutions) from the Korean Census data, and was used as quintiles in the analysis. We used ArcGIS program to produce the map of area-specific standardized incidence ratios (SIRs) and standardized mortality ratio (SMRs). We used the MLwiN program v2.18 to fit the multilevel models with levels defined by individual and area.

Results

Stomach, liver and lung cancer incidence and mortality rates were observed to be higher in more deprived areas than affluent areas. In particular, male liver cancer incidence rates in more deprived areas (highest quintile) were 63% higher compared to those in more affluent areas (lowest quintile). On the contrary, for cancers of breast, colorectum, prostate and thyroid, affluent areas showed higher incidence and mortality rates than deprived areas. We also identified the areas that showed significantly higher cancer incidence and mortality rates than the average of all areas, after taking into consideration of area- and individual-level deprivation.

Discussion

After accounting for the differences at the individual level, the cancer incidence and mortality rates were shown to be associated with the area-level deprivation. It is noteworthy that our data showed that breast, colorectal and prostate cancer incidence and mortality rates were higher in affluent areas than in deprived areas, while the opposite trend was observed in stomach, lung and liver cancer in Korea. Such phenomenon for breast, colorectal and prostate cancer might be explained from the shared lifestyle of high-fat diet and less physical activities that are considered as "westernized" or "economically developed" among people living in more affluent areas of Korea. However, this speculation will need to be investigated with further studies and there should be efforts to identify what are the causes of the differences observed in various areas. Then the cancer control program can be developed with strategies tailored for each area and different socioeconomic groups.

Key Note Lecture for Scientific Session 7

TRANSLATING LOCAL QUALITY ASSURANCE TO THE GLOBAL COMMUNITY

Jean-Michel Lutz

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Ensuring optimal data quality is a crucial priority for every cancer registry. The registry must also be able to document its data quality consistently over time. This underpins the validity of analyses of the registry's data and, more broadly, it enhances the usefulness of cancer registries in cancer control. Data quality affects the confidence that can be placed in the results of epidemiological analyses, helping to ensure the comparability of incidence and survival estimates, whether within a country or internationally. We discuss the quality of data produced by networks of cancer registries, both within a country and for international comparisons.

The first requirement is that each registry accepts transparency about its data quality, by regularly publishing standard data quality indices that are recognized by the whole professional community. For a network of cancer registries, however, it is also essential to standardise the principles of data management. This does not mean imposing a single method of data collection: each registry must adapt its data collection methods to its local environment (contact with clinical departments, pathologists, etc.). By contrast, the standardisation of data definitions, coding and output formats becomes a crucial requirement for a registry network.

Attaining optimal data quality in a network of registries, whether national or international, requires seeking maximal comparability: unbiased access to sources of information on diagnosis and death, and agreement to use the same international classification systems (ICD-O, ICD, TNM, etc.), and use of a common set of population weights for age-standardising either incidence (e.g. the world standard population) or survival (e.g. the international cancer survival standard weights).

Translating local quality assurance to the wider community depends on both producing and using the data. It is only when the data are used that their weaknesses are observed. Epidemiological research and collaboration with clinicians, demographers and public health specialists are therefore essential to improve and maintain data quality.

Data production requires both competency and the means of data production, as well as communication with users about the existence of the data and how results should be interpreted:

- Maintaining the competency of registry staff requires continuous education and training
- Ensuring the means of data standardisation and comparability would ideally require registries using the same software, and standardisation of data transfer processes, quality controls and output formats

Data use should match the needs of the community:

- Users should be regularly informed about the nature of the data: "the data you need do exist"
- Users should be kept informed of the continuous processes of data collection and updating of definitions
- Text and figures in reports should be simple and concise: reporting scientific issues intelligibly for a lay audience is a major challenge
- Providing unbiased interpretation of the results when they are released will often help minimise inappropriate reporting
- Good communication with users is important: both interviews and informal exchanges with reporters, press releases, official releases, etc.

Continuous improvement of efficiency and standardisation in data collection, management, analysis and publication, and effective liaison between research and public health domains, makes it possible to operate "profitable cancer registries" for the greater benefit of the community.

Jean-Michel Lutz

Deputy Director
National Institute for Cancer Epidemiology & Registration, Switzerland

Clinician and Epidemiologist, I worked in Cancer Registration in France (Grenoble), UK (London) and Switzerland (Geneve, Zurich). I'm in charge of coordinating the Swiss Network of Cancer Registry. I've been involved in several international programme such as EUROCARE, EUROCHIP and CONCORD studies.

O-1-15

HOSPITAL-BASED LONG-TERM SURVIVAL TREND IN BREAST CANCER: CHENNAI, INDIA, 1957-2006

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Background

Lack of data on complete follow up has long been an impediment in the unavailability of long-term cancer survival and trend analysis from cancer registries in India. This investigation is first of the kind and is based on hospital series of 10,411 breast cancers treated at Cancer Institute (WIA), Chennai, India, during the period of 1957-2006.

Methods

Follow up was predominantly done by active methods. Overall survival was estimated by cohort and period approaches using Kaplan-Meier method. Comparison of survival curves and trend was done by log rank test. Cox proportional hazard model was employed to elicit the independent prognostic factors.

Results

An increasing trend ($p < 0.001$) in survival by 10-year calendar period was observed: survival at 5, 10, 15 and 20-years from diagnosis corresponding to the latest eligible period were 68%, 45%, 39% and 26% respectively. Five-year survival of cases from urban (70%) than rural (67%) area or those aged 35-54 years (69%) than aged < 35 years (64%) or cases who had at least high school education (73%) than illiterate (65%) had significantly higher survival ($p \leq 0.05$) during the latest period and the trend was significant ($p < 0.001$) between periods. A decreasing survival with increasing stage of disease was forthcoming ($p < 0.001$). Multifactorial analysis stratified on calendar period revealed age at diagnosis, area of residence, education status and stage of disease as independent prognostic factors for survival. Period survival provided up-to-date estimates than cohort approach and closely predicted survival experience of cases registered during the period.

Discussion

The integration of systematic active follow up with registry operations together with adequate documentation has made survival analysis as a routine and has paved the way for relating long-term survival with the milestones in the evolution of treatment for breast cancer in five decades at the institute.

O-1-16

SURVIVAL OF PATIENTS DIAGNOSED WITH CANCER IN THE NORDIC COUNTRIES UP TO 1999-2003 FOLLOWED TO THE END OF 2006. A CRITICAL OVERVIEW OF THE RESULTS

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Background

Differences in Nordic cancer patient survival observed today originate from the 1970s, but were first identified in a mortality prediction from 1995. This paper provides timely comparisons of survival using NORDCAN, a database with comparable information from the Nordic cancer registries. Elucidation of the differences is important monitoring cancer care generally and evaluating of the impact of cancer plans.

Methods

The NORDCAN database 1964-2003 with follow-up for death through 2006, was used to analyse incidence, mortality and survival for all NORDCAN cancer sites. We analysed 5-year relative survival and excess mortality rates in the first three months and 2-5 years after diagnosis.

Results

The time trends in survival were largely similar between the Nordic countries with increases in 14 sites among men and 12 among women. The excess mortality rates were highest in the first three months after diagnosis in all countries, but excess rates decreased to similar levels across all countries 2-5 years after diagnosis. In relative terms excess mortality was highest in Denmark irrespective of follow-up period. Lower survival was observed for Danish cancer patients in 23 of the 33 cancer sites in men and 26 of 35 sites in women. Low and similar levels of survival were observed for cancers of the oesophagus, lung, liver and pancreas, while an 8-10 % point difference in survival was found between countries for colorectal cancer.

Discussion

The notable differences in Nordic cancer patient survival can be linked to national variations in risk factors, co-morbidity and the implementation of screening. Improved treatment and primary prevention, in particular the targeting of alcohol and tobacco use, is required to improve cancer control. The recently-initiated cancer plans in Denmark and Norway are yet to show an observable effect on the corresponding cancer survival.

O-1-17

SURVIVAL INDEX FOR ALL CANCERS COMBINED FOR THE PRIMARY CARE TRUSTS IN ENGLAND

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Background

In England, the primary health care services provided by the National Health Service are geographically organised under the responsibility of 152 Primary Care Trusts (PCTs). Timely access to outcome measures of cancer care is essential both at local and national level. These measures help guide local PCT-level policies. They can also be used as a national tool for surveillance and health strategy. We aimed to construct a composite measure of survival from all cancers combined for each PCT that could be a responsive and statistically robust tool.

Methods

We used population-based data for all adults who were diagnosed in England during 1996-2006 with a malignant neoplasm and followed up until 2007. Flexible regression models of the cumulative excess hazard were used to estimate one-year relative survival. The all-cancer combined survival index was obtained for each PCT and year of diagnosis by combining these estimates in a three-way standardisation adjusting for differences in the distribution of age, sex and cancer type. Funnel plots and smoothed maps of the survival index were produced for each calendar year in 1996-2006.

Results

Marked general improvements in cancer survival in England were observed. Funnel-plots showed that the marked over-dispersion seen in 1996 was still present in 2006, although slightly reduced. A North-South gradient in survival across England, with lower survival in the North, persisted throughout the period. A NorthEast-SouthWest gradient was also observed within the capital, London.

Discussion

This study demonstrates the feasibility of using such a survival index at small-area level and its utility i) to detect PCTs with consistently outlying survival over several years (funnel plots), and ii) to estimate the national pattern of geographic inequalities in cancer survival and their evolution with time (smoothed maps). Both presentations of this index provide a simple quality control tool that is considered helpful both for local and national health policy-makers.

O-1-18

TRENDS IN CURE FRACTION FOR COLORECTAL CANCER IN OSAKA, JAPAN, BETWEEN 1975 AND 2000

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Background

Colorectal cancer has increased strikingly, and now it is one of the most common cancers in Japan. Age-adjusted incidence and mortality rose until the early 1990s and then levelled-off. Population-based colorectal cancer screening with faecal occult blood test started in 1992 in Japan, but the programme performance is still poor (e.g. coverage rate and program sensitivity is low). Treatment has improved in many ways. We aimed to assess the impact of these changes by monitoring the trends in population cure in Osaka, Japan.

Methods

We analysed 33,885 colorectal cancer cases diagnosed in 1975-2000 in Osaka. We applied the multivariable mixture cure model, with Weibull distribution and logit link, to estimate cure fraction and median survival time (MST) for uncured patients, by sex, age, stage, period at diagnosis and subsites (left and right), and identified the effect of each factor toward cure fraction.

Results

For colon cancer, cure fraction increased dramatically from 36% in 1975-80 to 58% in 1996-2000. MST for the uncured prolonged from 8 to 12 months. Cure fraction was 5% higher in men than in women, MST being similar. Cure fraction has also increased for localised and regional tumours, from 63% to 80% and from 31% to 52%, respectively. Cure fraction of left-side colon cancer was higher than that of right. Cure fraction did not vary by age until 70 years, from which it declined. For rectal cancer, cure fraction increased from 32% to 51%, lower than for colon. No difference by sex was observed, but the cure patterns by the other factors were similar to those for colon.

Discussion

The reasons of those differential trends are complex, relating with both earlier detection and improved cancer treatment. Further analysis to estimate the respective role of prognostic factors on the patterns of cure fraction and MST will help to improve cancer control in Osaka, Japan.

O-1-19

THE IMPACT OF HEALTH INSURANCE ON CANCER SURVIVAL IN THE USA

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Background

President Obama's health care reform to extend health insurance coverage in the USA remains very controversial. The type of health insurance (or lack of it) was associated with cancer survival for patients diagnosed in the state of Kentucky during 1995-98. We aim to update that study to determine if health insurance remains a prognostic factor and if it can explain the wide differences in survival between blacks and whites.

Methods

We analysed data for 126,692 adults (15-99 years) diagnosed in Kentucky during 1995-2006 with an invasive primary cancer of the breast (women), cervix, bowel, lung or prostate and followed up to 2007. Kentucky Cancer Registry has collected details of the type of health insurance for all patients registered since 1995. Health insurance status was categorised as private, MEDICARE plus supplement, MEDICARE, other federal insurance, MEDICAID/welfare, not specified and uninsured. Information on stage at diagnosis and treatment was available. We have estimated 5-year relative survival by health insurance category using the maximum-likelihood approach and US national life tables. To obtain more accurate survival estimates, we will construct life-tables by sex, age, race and socioeconomic status for Kentucky. The 5-year relative excess risk of death in each health insurance category will be modelled, adjusting for age at diagnosis, sex (for bowel and lung), race, stage at diagnosis and treatment.

Results

For breast cancer in women, preliminary analyses show that 5-year survival was 89% among those who were insured privately (20% of patients) and those whose insurer was not specified (24%), 86% for MEDICARE with supplement (30%) and other federal schemes (1%), 80% for MEDICARE (10%), and 73% for MEDICAID (5%) and those who were not insured (4%). Similar patterns of survival by insurance category were observed for other cancers.

Discussion

The low survival among the poorest (MEDICAID) and uninsured patients may help target cancer control activities within the State of Kentucky and the USA.

Key Note Lecture for Scientific Session 8

ENHANCING CANCER REGISTRY DATA FOR QUALITY-OF-CARE ASSESSMENT

Joseph Lipscomb

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Cancer registries are centrally important to evaluating and improving the quality of cancer care. To reach their full potential for quality-of-care assessment, however, both population-based and hospital-based registries need to be enhanced (a) through linkage to additional clinical and administrative data sources and (b) by capitalizing on technological advances in interoperable electronic health record systems and web-based platforms that can support rapid, accurate, and decision-relevant communication between providers and registries. The purpose of this plenary session presentation is to review and evaluate advancements in the use of enhanced cancer registry data for quality-of-care assessment in several major arenas of application: patterns-of-care studies for evaluating quality at the population level; performance assessment at the hospital level and potentially at the physician level; and quality improvement at the patient level through rapid case ascertainment. Focusing on recent developments in the U.S., the presentation will provide timely updates on key initiatives, including: population-level quality assessments using such registry platforms as the NCI's Surveillance, Epidemiology and End Results (SEER) Program, the CDC's National Program of Cancer Registries (NPCR), and the Commission on Cancer (CoC) National Cancer Data Base (NCDB); ongoing efforts (including in the State of Georgia) to link population-based registries to an array of external data sources, including public and private payer insurance files and multiple clinical data sets; and the CoC's new Rapid Quality Reporting System (RQRS) to promote "near real time" data collection, reporting, and feedback to support both performance assessment at the institutional level and quality assurance at the patient level. The impact of such innovations on the evolution toward a "national cancer data system" to support cancer quality assessment, and outcomes research in general, is assessed.

Joseph Lipscomb

Joseph Lipscomb, PhD., is Professor of Health Policy and Management and Georgia Cancer Coalition Distinguished Cancer Scholar at the Rollins School of Public Health at Emory University. He is also a co-leader of the Cancer Control and Population Sciences Program at Emory's Winship Cancer Institute. From 1999 until arriving at Emory in 2004, he was Chief of the Outcomes Research Branch at the National Cancer Institute. At NCI, he co-chaired the Cancer Outcomes Measurement Working Group, chaired the trans-agency Quality of Cancer Care Committee, and was NCI lead for a collaborative Federal effort to establish a project at the National Quality Forum to develop consensus measures of cancer care quality. He has published widely on a variety of topics in health economics and outcomes research, including on patient-reported outcomes assessment, quality-of-care evaluation and improvement, and the theory and practice of cost-effectiveness analysis. He was co-editor for the volume, *Outcomes Assessment in Cancer: Measures, Methods, and Applications* (Cambridge University Press, 2005); co-editor of a *Journal of the National Cancer Institute Monograph* (2004) on cancer outcomes research; co-editor for a special issue of *Value in Health* on, "Moving the QALY Forward: Building a Pragmatic Road" (2009); and co-editor of a *Medical Care* supplement on, "Health Care Costing: Data, Methods, and Future Directions" (2009).

Dr. Lipscomb has recently been principal investigator on two research grants from the Centers for Disease Control and Prevention examining patterns and quality of cancer care in Georgia, and also PI for a grant from the National Institutes of Health on reducing health care disparities in urban areas. He is PI on a grant from the Association of Schools of Public Health and the CDC (funded by NCI and the Georgia Cancer Coalition) to augment the Georgia Comprehensive Cancer Registry with administrative and clinical data from public and private sources to support comparative effectiveness research and quality-of-care assessment. He is a member of the Steering Committee for the Georgia Comprehensive Cancer Control Plan, which has entered its implementation phase. He serves on national committees to improve cancer outcomes and quality at both the American College of Surgeons' Commission on Cancer (CoC) and the American Cancer Society (ACS). For the ACS, he chairs the Health Services Research Advisory Committee and is a member of the Quality of Life Ends Committee. For the CoC, he is co-chair of the Participant User File (PUF) Task Force for the National Cancer Data Base, and a member of the Quality Integration Committee, whose current charge is to conduct a national pilot test of the new Rapid Quality Reporting System (RQRS).

He received his PhD in economics from the University of North Carolina at Chapel Hill in 1975, and a BA in mathematics from Vanderbilt University in 1970. From 1975 until joining the National Cancer Institute, he was on the faculty at Duke University with primary appointments in the Sanford School of Public Policy and the Department of Community and Family Medicine. At Duke, he received the Alumni Distinguished Undergraduate Teaching Award in 1979 and was nominated for this prize on multiple other occasions. From 1989-1992, he directed the VA Physician Requirements Study at the Institute of Medicine in Washington. From 1993-96, he was a member of the U.S. Panel on Cost-Effectiveness in Health and Medicine.

O-2-05

EUROPEAN WIDE REGISTRATION OF THREE IMPORTANT CANCER INDICATORS: THE EUROCHIP PROJECT

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Background

Since 1960 cancer registries (CR) provided population-based comparative survival statistics for cancer patients showing large differences across Europe. EUROCHIP (European Cancer Health Indicators Projects) focuses on fighting inequalities in the burden of and care for cancer. EUROCHIP-1 proposed a list of health indicators and three indicators were supposed to be strictly associated with cancer survival differences: "stage at diagnosis", "cancer treatment delay", "compliance with cancer guidelines". EUROCHIP-2 pilot studies in 11 countries studied the feasibility of collecting these indicators. The current project, EUROCHIP-3, Work package 5, aims to get insight in the present situation of collecting these indicators in all European countries.

Methods

In EUROCHIP-2, cancer registries of 11 European countries collected data on female breast and colorectal cancer patient samples to evaluate the possibility to collect the indicators.

In EUROCHIP-3, a qualitative questionnaire was addressed to all European CR in collaboration with the EUROCOURSE project and the ENCR. The questionnaire asks about data gathering by the CR, whether the CR collect data by routine and if not, what were the most important reasons; lack of staff, funding, data sources or interest.

Results

EUROCHIP-2 pilot studies resulted in:

- 1) "stage at diagnosis" is already available in some countries, while it is collectable with work and funds in other countries;
- 2) "delay of cancer treatment" is collectable in some countries but it needs specific developments according to different national health systems to improve comparability;
- 3) "compliance with cancer guidelines" are collectable with work and funds in the majority of countries.

Results from the EUROCHIP-3 questionnaires are expected in August 2010 and will be presented.

Discussion

Registration of indicators to support the fight against inequalities in the burden of and care for cancer should be supported by cancer registries.

O-2-06

FACTORS CONTRIBUTING TO HIGHER MORTALITY AMONG BLACK WOMEN WITH BREAST CANCER IN LOUISIANA

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Background

Nationwide breast cancer death rates have been declining in the past 15 years among both white and black women. However in Louisiana, the rates among black women, who are predominantly of low SES and medically underserved, remain stable. The purpose of this study is to identify factors contributing to high mortality rate of breast cancer among black women in Louisiana.

Methods

We analyzed data from the Louisiana Tumor Registry (LTR), State Public Hospital System and CDC-funded Patterns of Care Study, using Chi-square test and Cox proportional hazard models.

Results

Data from the LTR showed breast cancer patients from public hospital system had a higher proportion of advanced tumor at diagnosis than patients from other facilities (40% vs. 31% for whites and 49% vs. 41% for blacks). Analysis of stage data from public hospitals revealed that patients who had regular care within 6 months prior to breast cancer diagnosis (sustained patients) had a higher proportion of early stage tumor than those without any clinic visit in the same time period (fly in), 61% vs. 47%. In-depth analysis using POC study confirmed black patients had more advanced disease and aggressive tumor (>3 cm tumor size, ER-/PR-, poorly/undifferentiated tumor). They were also less likely to receive guideline primary and adjuvant therapies. The risk of death from all causes was 70% higher for blacks than whites when adjusted for age only. When tumor stage, grade, ER/PR status, tumor size, comorbidity, treatment, and insurance status were adjusted, the racial disparity disappeared (hazard ratio=1.02, 95% CI=0.79-1.31).

Discussion

The higher breast cancer death rates among blacks than whites are attributable not only to racial differences in tumor characteristics and comorbidity but stage at diagnosis, conformity to guideline therapies, and insurance. Increasing early detection, adherence to guideline therapies and equal access to health care would reduce racial disparities in breast cancer mortality in Louisiana.

O-2-07

**PATTERNS OF CARE FOR EUROPEAN COLORECTAL CANCER
PATIENTS DIAGNOSED 1996-1998:
A EUROCARE HIGH RESOLUTION STUDY**

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Background

To identify disparities in the management of colon and rectal cancer across Europe by assessing population-based information from 12 European cancer registries (CR) participating in EUROCARE, together with additional information obtained from individual clinical records.

Methods

We considered five indicators: (a) resection with curative intent; (b) post-operative mortality; (c) proportion of stage II/III colon cancer cases given adjuvant chemotherapy; (d) proportion of rectal cancer cases receiving radiotherapy; and (e) proportion of curative intent resections with 12 or more lymph nodes examined.

Results

A total of 6871 colorectal cancer patients, diagnosed between 1996-1998, were examined. Overall 71% of patients received resection with curative intent, range 44%-86% by CR; 46% of stage III colon cancer cases (range 24%-73% by CR) and 22% of stage II cases (not then recommended) received adjuvant chemotherapy; 12% of rectal cancer cases received adjuvant radiotherapy, range $\leq 2\%$ in 5 CRs to $> 51\%$ in 2 CRs. For only 29% of curative intent resections were 12 or more lymph nodes examined.

Discussion

This study reveals that, although most patients received surgery with curative intent, disparities in treatment for colorectal cancer across Europe in the late 1990s were unexpectedly large, with many patients not receiving treatments indicated by published clinical trials. Consensus guidelines for CRC management are now becoming available and should be adopted across Europe. It is hoped that dissemination of guidelines will improve the use of scientifically proven treatments for the disease, but this should be monitored by further population-based studies.

O-2-08

IS BREAST CANCER PROGNOSIS HIGHLY AFFECTED BY CO-MORBIDITY?

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Background

Many factors have been described to be related to breast cancer but no studies have been conducted previously in Spain based on population survival and its relation with comorbidity. A study is going in nine Spanish areas about female breast cancer survival. This work describes preliminary results in a participating area. Aim: To describe breast cancer survival taking into account co-morbidity.

Methods

Population-based study. New cases of female breast cancer diagnosed in 2005 residing in Murcia Region have been selected (CIE-10 C50). The information was obtained from the Murcia Cancer Registry as well as revising clinical records, radiotherapy services, oncology records and other sources of information. The follow-up has been conducted until 1/1/2009 in order to know vital status, the endpoint variable. The independent variable is Charlson Co-morbidity Index. Confounding variables were age and stage. We estimated 3 years observed and relative survival (RS) using the maximum likelihood approach for individual records (Estève, 1990). Survival was calculated according Charlson score divided in three categories: zero, 1-3 and more than 4. Cox's regression analysis has been done to identify the effects of prognostic factors (age, stage) on survival.

Results

We included 410 incident breast cancers in the analysis. Mean age 59. The Charlson index was get in the 94% of cases. An index of zero was found in 21% of patients. 59% has a score between 1 and 3 and the rest more than 4. 3-years observed survival was 89% and RS 93%. The lower survival was found in the score up to 3 (3y RS 86.7). No differences in RS between Charlson 0 and 1-3 were found, but significant differences with score up to 3 (Hazard ratio 3.6 CI 1.6-8.3) were detected. After adjusting by age and stage, the significant lower survival in the score group up to 3 disappear. The main effect of prognosis was determined by stage.

Discussion

Although co-morbidity affects cancer prognosis, it is also true that comorbid diseases are not the main predictor in breast cancer prognosis. These preliminary findings are important at population level and it should be verify in the future.

O-1-20

CANCER TRENDS IN YAOUNDE. REVIEW OF 5 YEARS OF POPULATION CANCER REGISTRATION IN YAOUNDE, CAMEROON

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Background

The occurrence of cancer in the developing countries is often neglected as a problem of major concern in preference to the various infectious diseases. Yaounde, the political capital of Cameroon, in Central Africa, has a cosmopolitan population of about 1.5 million inhabitants, and comprises almost all ethnic groups of the nation. In recent years, cancer has been found to be a public health problem in Cameroon. Because hospital-based statistics do not accurately reflect the cancer burden in a given community, we decided to carry out population cancer registration in the Yaounde Cancer Registry to document trends in cancer incidence and prevalence in the population. This data is hoped will serve for evaluation of the cancer burden and planning of management in the population. Long term prospects may reveal etiological and risk factors for particular cancers in the population.

Methods

Data of the Yaounde Cancer Registry during the period 2004-2008 (5 years) was reviewed using CANREG 4 data base. All cases of cancer registered during this period were included while the others were excluded. Epidemiological data on the patients as well as the nature of tumour was assembled and analysed.

Results

4,035 cancer cases comprising 40.82% males and 59.18% females were registered in the Yaounde population in 5 years from 2004-2008. 12.5% involved children aged 0-14 years. Cancer prevalence in the population was mainly breast (32.4%), malignant lymphoma (30.3%), uterine cervix (21.4%), prostate (20.0%), Kaposi sarcoma (15.3%), liver (9.0%). Patients were mainly from the West (29.6%), Centre (26.5%), and Littoral (7.4%) regions. Most patients were of low socio-economic class and 60% presented at an advanced stage of disease. Surgery was the main treatment procedure, while 4.0% of patients were seropositive for HIV.

Discussion

There is a high and increasing proportion of HIV/AIDS-related cancers in the Yaounde population. Prostate cancer is ranked primary in males and affects men above 45 years. Cancers of the breast (ASR 27.5) and cervix (ASR 21.9) are highest affecting women and both account for more than half of all female cancers and the 35-54 years age group is most vulnerable in both. The regional distribution of patients is inversely proportional to the distance of the region from the municipality of Yaounde and not linked to any ethnic predisposition to the disease. Limitations and challenges in cancer registration in the Yaounde population include public education, finance for complete registration and staff remuneration, unreliable population data and unstable residence. The data of the Yaounde Cancer Registry has however proved useful as an indicator of cancer trends in the population.

O-1-21

RECURRENCE PATTERNS FOR LOCALIZED RENAL CELL CARCINOMA AFTER NEPHRECTOMY AT A SINGLE INSTITUTION-A REGISTRY BASED REVIEW

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Background

Recurrence patterns are unknown for localized renal cell carcinoma (RCC) after nephrectomy at the Dept of Urology, Singapore General Hospital (SGH). The Urological Cancer Registry at Dept of Urology SGH was used to examine recurrence rate, patterns and time to recurrence.

Methods

A retrospective review of 261 localized RCC patients who underwent nephrectomy between 2005 and 2008 at SGH was performed. The case-finding source was the hospital operating theater management system. The AJCC 6th edition staging system was used to stage localized RCC, which was audited by a CTR. Kaplan-Meier analyses were used for recurrence rate calculations.

Results

Number of patients with pT1N0, pT2N0, pT3N0 and pTxN+ RCCs were 164, 27, 64, and 6 with median follow-up times of 24.7, 33.7, 26.3, and 22.3 months. Predicted recurrence rates for 2-year were 0%, 7.4%, 18.4% and 66.7%, for 3-year were 3.4%, 26.5%, 22.3% and 66.7%, and for 5-year were 21.5%, 26.5%, 22.3% and 66.7% respectively.

Overall recurrence rate was 10.3%. Local recurrence rates were 0.6%, 0%, 0%, and 0% for pT1, pT2, pT3 and pTxN+ compared with distant recurrence rates of 3.0%, 18.5%, 18.8% and 66.7%.

Recurrence rates were 7.1%, 7.4%, 11.8% and 36.4% for Fuhrman grade 1, 2, 3 and 4 ($p=0.006$).

Significant differences were found in median times to recurrences between pT1/2N0 and pT3N0/pTxN+ ($p=0.014$), Fuhrman grades ($p=0.031$) in univariate analyses. However no significant differences were found in multivariate analyses ($p=0.096$, 0.382 respectively).

Discussion

Higher pathological stage, higher grade and lymph node positivity correlated with higher recurrence rates. Median times to recurrences for locally advanced RCCs (pT3/pTxN+) and higher Fuhrman grade were significantly shorter. The cancer registry database allows accurate monitoring of disease progression following surgery, and is useful not only for counseling of patients regarding their prognosis, follow-up plans, but also to identify high risk patients who might benefit from clinical trials.

O-1-22

EPIDEMIOLOGY OF CANCER CERVIX IN KARACHI SOUTH. ITS IMPLICATIONS FOR THE FUTURE

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Background

Cervical cancer, a common neoplastic disease affecting women, is not considered a potential threat for Muslim countries, which have neither organized screening nor vaccination programs.

Methods

Cervical cancer data of Karachi Cancer Registry (1995-2009) is used for future projections.

Results

Cancer cervix in the period 1995-97, accounted for approximately 3.6% of all cancers in females in Karachi South and was the fifth malignancy in hierarchy. The age standardized incidence rate (ASR) world per 100,000 was 6.81. In the period 1998-2002, cancer cervix accounted for approximately 3.9% of all cancers in females, became the third most common cancer with an ASR per 100,000 of 7.5. During 2003-07, it accounted for approximately 5.0% of all cancers in females, continued as the third most common cancer but the ASR, world per 100,000 reached 9.9. More ominous, this increase was observed in the younger birth cohorts (ages 25 to 40 years). Finally, in the 2008-9 data, the ASR, world has gone to 11.1 per 100,000, albeit with marginal down staging.

Discussion

In a low risk Muslim country, during the past 15 years we observed cancer cervix moving from the lowest to a moderate risk zone, on a scale of 1 to 5, with the maximum increases observed in the below 40 year age group. The risks the girls of today will face as women of tomorrow, for cervix cancer may be dismally higher than the risks their mothers are facing today or the risks their grandmothers faced. Lets join hands to help these innocent future victims of todays ignorant health policies.

O-1-23

CERVICAL CANCER INCIDENCE IN SOUTH AFRICA WITHIN 10 YEARS OF MASS SCREENING

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Background

PROMEC Cancer Registry which is population-based in ten magisterial areas the former Transkei region of the Eastern Cape Province has tracked the incidence of cancers experienced in this region. Among females, cervix cancer is leading and accounts for 36.3% of the total cancers observed during the period 2003-2007. Since 2000 free mass population-based screening programme is available in South Africa as part of the National Cancer Control Policy. Bearing in mind the cost of regular screening, the guidelines state that women attending the public sector services are entitled to three free Pap smears per lifetime starting at the age of 30 years or older, with a 10 year interval between each smear.

Methods

Both active and passive methods were used in case finding. After manual coding, data were entered into a computerized database using CanReg, a software program designed by the International Agency for Research on Cancer. Age standardized rates were calculated for each magisterial area using the World standard population.

Results

During the period 2003-2007, cervix cancer accounted for 36.3% of total cancers observed with age standardized rates of 173.9 per 100 000. Stages 0-1 accounted for 5.6% whereas stages 3-4 were 11.1%.

Discussion

The high rate of cervical cancer diagnosed at advanced stages is alarming especially in the country like South Africa where free mass population-based screening programme is available as part of the National Cancer Control Policy. There are indications that the cytology based screening programme is not working well in this area. The population-based cancer register in the former Transkei region of the Eastern Cape provides an opportunity to investigate the situation. There is need to assess whether this is the most suitable programme to reduce the burden of this cancer or whether new technologies should be considered.

Abstracts

Poster Sessions

Poster viewing: October 12 (Tue) 13:45-14:30

Cancer monitoring and control planning General topics and screening	P-1-01~P-1-18
Cancer monitoring and control planning Incidence and mortality (1)(2)	P-1-19~P-1-57
Cancer monitoring and control planning Survival	P-1-58~P-1-78

Poster viewing: October 13 (Wed) 13:45-14:30

Quality of cancer care and outcomes research	P-2-01~P-2-30
Methodology of cancer registry –up to date-	P-3-01~P-3-29
Cancer registration for evaluation of risk factors	P-4-01~P-4-20

P-1-01

THE ROLE OF STIGMA ATTACHED TO CANCER ON CANCER REGISTRY AND MONITORING

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Background

Cancer has traditionally been surrounded by community misunderstanding, fear, and stigma. This affect negatively on cancer registry and monitoring. The aim of this paper is to present details of development of stigma, and a proposal of how could we release an enlightening campaign in our country, aiming to erase or fight stigma associated with cancer.

Methods

The paper provides an analysis of the historical processes by which stigma has emerged and become associated with cancer. It also explores the process by which these associations have been loosened, identifying distinctive features of stigma that may guide intervention programs; and evaluating changes in the magnitude and character of stigma over time and in response to interventions and social changes.

Results

- Stigma towards people with cancer has sometimes a detrimental effect on their ability to obtain services, the type of treatment and support they receive, and their acceptance in the community.
- The stigma associated with cancer is in large part promoted by the media.
- Improving community attitudes by increasing knowledge and understanding about cancer, is essential if people with cancer are to live in, and contribute to, the community, free from stigma.

Discussion

Stigma associated with cancer is one of those social maladies that will probably never be totally eliminated, but there are ways in which it can be diminished. Although, research on stigma has grown dramatically over the past two decades, particularly in the western countries, I hope that this paper may provokes for more studies and researches to be carried out in our region.

P-1-02

PREDICTING OF OBTAIN A PAP SMEAR AMONG WOMEN'S: A TEST THEORY OF PLANNED BEHAVIOR

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Background

Cervical cancer is the second most common cancer among females in the world and the most common in developing countries. The total number of deaths worldwide is 235,000 annually.

Secondary prevention, achieved through Pap smear testing, is the single most effective tool in reducing deaths due to cervical cancer.

The purpose of this study was to determine the empirical adequacy test theory of planned behavior to explain intentions among marriage women's refer to health centers in Hamadan city to obtain a Pap smear.

Methods

A cross-sectional study, total of 400 woman's aged 20-65 years, was randomly selected for participation in this study. Participants responded to the researcher designed questionnaire. A questionnaire was developed to measure each of the expanded behavioral intention model components.

Results

63/8 % of sample obtain Pap smear test at least one time. 28.3 % of sample reported their systematic obtaining pap smear. Their was a significant correlation ($p < 0.05$) between cervix cancer history in family and obtain systematic pap smear test. Also their was a significant correlation ($p < 0.05$) between age and obtain systematic pap smear test. A logit model for response variable was conducted and the best predictor of obtain a pap smear test was subjective norm ($OR = 1.35$ & $p\text{-value} = 0.003$).

Discussion

As it revealed by statistical analyze subjective norm was the most effective factor between women for and obtain systematic Pap smear test. It is important to pay attention to education for women and their relatives by medics and educational health personals.

P-1-03

IMPROVING QUALITY OF DATA IN THE NEWLY-ESTABLISHED GOLESTAN POPULATION-BASED CANCER REGISTRY

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Background

Golestan population-based cancer registry (GPCR), established in 2004 in Golestan province of Iran, has been accepted as a voting member of the IACR since 2006. After establishment, our major concern was to improve its data quality. In this paper we will present indices of data quality in the GPCR.

Methods

GPCR registered all newly diagnosed primary cancer cases according to the IACR protocols. We calculated some data quality indices including percentage of cases with microscopic verification (MV), death certificate only (DCO), other and unspecified sites (O&U) and unknown age (UnK).

Results

Totally 7010 cancer cases were registered in the GPCR during 2004-2007. Proportions of cases with MV, DCO and O&U were 69.2, 11.5 and 2.5 percent, respectively. Percentages of MV were 60.1, 70, 71.1 and 73.6 in 2004, 2005, 2006 and 2007, respectively. Proportions of O&U decreased from 6% in 2004 to 1.9% in 2007. Proportions of DCOs were 23, 11.4, 8.3 and 5.6 percent in 2004, 2005, 2006 and 2007, respectively. There was no case of UnK during the period.

Discussion

GPCR data quality had improving trend from 2004 to 2007. Our experiences may be useful for newly-established cancer registries, especially in developing countries.

P-1-04

HARMONIZATION OF THE BAHIA BLANCA CANCER REGISTRY WITH THE SOCIETY: A PROCESS TAKING NEARLY 20 YEARS

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Bahia Blanca Cancer Registry, Argentina

Background

Bahia Blanca Cancer Registry, also known as Cancer Registry for the South of the Province of Buenos Aires, started in 1989. The first 15 years, it was supported by an NGO: the Argentine Association for Cancer Prevention and Education that was created with that objective as there was no CR in Argentina at that time. Our data were accepted in CIV, 8 and 9 Ed.

Methods

The presentation is based on the personal experience of the protagonists working in the CR.

The purpose of this presentation is to summarize the strengths that allowed to harmonize with Bahia Blanca society and the weaknesses that made it necessary to take such a long time.

Results

Among the last I need to mention: health professionals are mainly prepared for assistance rather than prevention so it was not easy for them to understand the sense of a CR; the health system is heterogeneous with more than 400 "obras sociales" (the health system serving a particular union) producing dispersion of data; public assistance (for poor people) is not homogenous; there are provincial and municipal hospitals; there is not a Cancer Program, there are more physicians than necessary and the professional activity is extremely competitive, producing marked trouble for the success of the CR.

In 2004 the Registry was consulted by the Municipality of Bahia Blanca due to the fear expressed by the population near the petrochemical industry. The mobilization of the neighbors went public.

After the first part of the survey was successfully presented in 2006, a more comprehensive agreement was subscribed and it has been renewed since then. This allowed the Registry to retain the technicians and also to have three fellows that are advanced medicine students.

The continuation of the same survey between 2003 and 2007 was presented in collaboration with other teaching staff and researchers from the School of Medicine. This project is on his way.

Discussion

At present, the fluent relationship with the local government of Bahia Blanca and the local university (Universidad Nacional del Sur) is reinforced by national leadership.

The reason for such leadership is due to the fact that our Registry has contributed decisively to the creation of a National Population Based CR Association and the organization of the first three meetings.

P-1-05

FACTORS INFLUENCE BREAST CANCER SCREENING PRACTICES AMONGST ARABIC WOMEN LIVING IN QATAR

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Background

Breast cancer is frequently diagnosed in Arab women living in Qatar. They are often diagnosed at advanced stages of breast cancer.

Methods

Adopting the Multiple Intervention Program conceptual framework, we undertake a three-phase research program for which the goals are to (1) understand the breast health experience of Arabic women in Qatar; (2) identify and implement strategies that assist women to participate in breast cancer screening activities; (3) evaluate, facilitate, and sustain Arabic women's participation in breast cancer screening. In phase I of the research program we will conduct two studies. Study 1: This quantitative cross-sectional survey will investigate Arabic women's participation rate in breast cancer screening, their knowledge about breast cancer, barriers and facilitators to participation. Using a structured questionnaire, we will conduct face-to-face interviews with Arabic women aged 35 and over in 3 different cities in Qatar. Convenient sampling will be used to recruit 753 participants. Descriptive and inferential statistics will be performed. Study 2: Adopting Ecological perspective and Kleinman's Explanatory Model of Health and Illness, this ethnography qualitative study will gain insight on: 1) how Arabic women view and participate in breast cancer screening activities, 2) how social, cultural, historical, and economic influence Arabic women's breast cancer screening, access to screening services, and social support networks, 3) what intervention strategies will increase awareness of early detection and participation in breast cancer screening among Arabic women. Purposive sampling will be used. Qualitative in-depth interviews will be individually conducted with 50 Arabic women and 50 Arabic men age 35 and over, and 30 health care providers. Qualitative data analysis will be performed.

Results

Not available at present time.

Discussion

The information obtained from both studies will help to develop culturally appropriate and effective intervention strategies to raise awareness and participation rate in breast cancer screening among Arabic women living in Qatar.

P-1-06

EVALUATION OF ENDOSCOPIC MASS-SCREENING FOR GASTRIC CANCER IN NIIGATA CITY, JAPAN

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Niigata Prefectural Cancer Registry, Japan

Background

In Japan, the mortality rate of gastric cancer is remarkably high, therefore mass-screening for gastric cancer have been performed widely all over Japan. AS the screening method, X-ray examination is usually used. Effectiveness to reduce mortality in gastric cancer by X-ray mass-screening had been reported. So, mass-screening method with X-ray had been established in Japan. On the other hand, mass-screening with endoscopic examination is not widely performed because of troublesome for much examination at once. In addition, endoscopic mass-screening is not recommendable in Japanese Guideline for mass-screening because of lacking evidence to prove its effectiveness. Even in such circumstances, mass-screening for gastric cancer with endoscopy started in Niigata city since 2003, collaborated with barium meal X-ray examination.

Using this endoscopic mass-screening data, the effectiveness of mass-screening is analyzed ascertaining with Niigata Prefectural Cancer Registry.

Methods

During the past 6 years, a total of 122,966 cases with endoscopy and 114,729 cases with X-ray were examined as participants of mass-screening in Niigata city.

False negative ratio and reducing of cancer death ratio are analyzed with the data with Niigata Prefectural Cancer Registry. Total finding ratio of gastric cancer in mass-screening is also ascertained with Niigata Prefectural Cancer Registry.

To prove reducing of gastric cancer death, mass-screening cases in 2003 and aged matched residents in Niigata as a control group are used.

For false negative ratio, mass-screening data in 2003 and 2004 are verified with the data of Niigata prefectural Cancer Registry.

Results

1) Finding ratio of gastric cancer with endoscopy is 0.93% in endoscopic screening and 0.33% in X-ray screening. After identification with cancer registry the finding ratio with endoscopy is 1.01% in 2003.

2) False negative ratio with endoscopic examination and with X-ray examination in 2003, 2004 are 3.35% and 23.78% respectively. Reducing of Gastric cancer death during 5 years is shown in table. Gastric cancer death ratios are not so different between endoscopic examination and X-ray examination. In the ratio compared with gastric cancer and total cancer death, mass-screening group showed lower compared with non screening group.

3) Gastric cancer death ratio in the cases that showed no malignant gastric lesion in mass-screening was extremely low in endoscopic examination group compared with that in X-ray examination group.

Cancer death ratio (1/1000) and in total cancer death

Male

Examination// Number// Death ratio// Gast. ca./total Ca

endoscopy..... 3,263.....2.528.....8.202

X-ray..... 7,463.....3.492.....9.600

non.....16,753.....4.101.....13.868

Female

Examination// Number// Death ratio// Gast. ca./total Ca

endoscopy.....4,855.....0.807.....5.743

X-ray..... 12,595.....1.035.....8.571

non.....130,000.....2.051.....13.090

Discussion

The data of gastric cancer death during 5 years suggest reducing effect of gastric cancer is observed in the group of mass-screening compared with non screening group.

Even though, few difference between a total endoscopic mass-screening cases and X-ray mass-screening cases, much difference is observed in the cases that showed normal findings in the screening between endoscopic group and X-ray group. This result suggest endoscopic examination is effective to reduce gastric cancer death for more long periods. This finding will be depending on difference on finding rates of gastric cancer in early stage.

Finally, reduction in gastric cancer deaths with endoscopic mass-screening is clear comparing with non participating people and its rate is almost same as well as X-ray screening.

P-1-07

EUROCOURSE: TOWARDS OPTIMISATION OF THE USE OF CANCER REGISTRIES FOR SCIENTIFIC EXCELLENCE IN CANCER RESEARCH IN EUROPE

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Background

EUROCOURSE is initiated by the European Network of Cancer Registries (ENCR) and 'their' programme owners and managers: Cancer Societies, regional and national cancer registries and public service organizations, including ministries of Health and Science, charities and cancer centres. The project aims to root cancer registration in cancer control across Europe, through their role of independent and valid transnational information provider on cancer occurrence and outcome, thereby also facilitating translational research. Furthermore, EUROCOURSE should offer a perspective for regional and national funding bodies to contribute to cancer control at European level.

Methods

The 15 EUROCOURSE partners represent program owners and program managers from 12 countries.

EUROCOURSE will explore diversity in quality, usage and output, commissioning and funding of cancer registries across Europe. Since 1989 these registries are associated in the European Network of Cancer Registries (ENCR, counting about 170 members) with the secretariat provided at the International Agency for Research on Cancer (IARC) of WHO in Lyon.

The 10 work packages will synthesize and stimulate best (and ethical) practices in data collection, management, analysis, interpretation and peer reviewed publication. The aim is to combine advances in informatics technology with data privacy protection and promote electronic data synthesis at European level, through a portal with uniform quality control, leading to better use of data in the various European research projects.

Guidelines on how to handle in-situ cases, multiple primaries, clinical and death certificate only cases, etcetera will be made uniform. Furthermore, ethical conduct of registry-based operations and studies will be clarified, based on existing best practices that comply with the EU-directive. Special interest will be given to the role of registries in perspectives for clinical evaluation, evaluation of population-based screening and supporting population-based cancer biobanking.

Results

The tasks of cancer registries are well and briefly described in a paper by Brewster, Coebergh and Storm.¹ In fulfilling this at a broad European level, uniform rules for cancer registries and quality assurance will strengthen the collaborative and comparative use of cancer registration data for cancer surveillance across Europe and will strengthen population-based translational cancer research. EUROCOURSE's inclusive approach will culminate in a EUROPEAN CANCER CONTROL SUMMIT.

Discussion

In the autumn of 2011 a summit will be organized for all stakeholders in the cancer control community in Europe. An overview of all achievements will be given as well as future perspectives.

P-1-08

**CANCER SCREENING IN A LARGE POPULATION TRENDS
OF CANCER INCIDENCE ANALYSIS**

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Background

Objective: To study the early screening of natural populations of cancer incidence trends change.

Methods

Cixian tumor registry data. Sampling between the two towns 1998-2008 the incidence of esophageal cancer cases, calculated to describe the incidence of rough.

Results

1998-2003 Fuma Gou Xiang of esophageal cancer incidence rate fluctuations between the 75-149/10 million in 2005, the incidence of sudden escalation to 350.17/10 million; the other towns the incidence trends are similar, but the highest incidence In 2006, the 263.57/10 million. The following year, the incidence rate dropped sharply to 61.50/10 million. Two years of volatile disease.

Discussion

The reasons for the changes caused by short-term trends in 2005-2006, the county town were the two large-scale screening of early esophageal endoscopy. Caused by human intervention, the time trend of sharply increased esophageal cancer, so the time to analyze trends on short-term impact. Screening for early detection of cancer among patients with cancer during the registration, should be well marked statistics to eliminate or reduce all kinds of bias, as the basis for comprehensive evaluation of screening results.

IMPROVEMENT IN CANCER MORTALITY ABSTRACTION IN LOW RESOURCE SETTINGS

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Background

Sikkim is a state located in the northeast region of India and has a population based cancer registry (PBCR) established in the year 2003 under the National Cancer Registry Programme (NCRP). This registry is among the very few in India which collects cancer for the entire population of the state. Sikkim is situated in the Himalayas with difficult terrain and remote areas where access is difficult.

Objectives:

- 1) To compare the cancer mortality information collected through routine registry operation where cancer is mentioned on the death certificate with that obtained by matching incident data with information on all other deaths reported by the department of Vital Statistics.
- 2) To suggest methods for improvement of cancer mortality information in low resource settings.

Methods

Cancer registration in India is active, in that, staff of PBCRs, personally visit various sources where cancer is diagnosed/treated as well as to the places where information on cancer death is available. For the latter staff record information on a standard mortality core form wherever cancer is mentioned on the death certificate. However, because of the incorrect information on the certificate of death only around 15-20% of cancer deaths are recorded as such either as immediate or antecedent cause of death in the death certificate. For the majority of the other cases only "cardio-respiratory arrest" is mentioned as the cause though this is only a mode of dying and not the real cause. As a result cancer mortality data collected by the registries is far from complete. With increasing use of electronic information technology death records are being computerized. Software programmes developed by NCRP help in quickly listing potential matched incident cases with mortality data. So the data-set having all causes of death were matched with the incident data base from 2005 to 2008.

Results

This provided additional matched deaths and boosted the mortality data by around 15-20% while also increasing the Mortality Incident Ratio from 38.6 in 2003-2004 where all cause mortality was not collected and matched to 47.9 in 2005-2006 and 47.1 in 2007-2008.

Discussion

Mortality information collection is a problem in low resource settings especially where information is not complete or accurate. Complete and correct cancer mortality information is important for good quality cancer registration and for examining population based survival. Matching all cause mortality with incident data manually is very cumbersome and time consuming. Using the Software applications programme improved the mortality information considerably. This methodology can be adopted in low resource settings.

P-1-10

STAGING, MISSING DATA, AND COLORECTAL CANCER CONTROL IN UMBRIA, ITALY

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Background

Umbria is a small Italian Region (1 million inhabitants). All cancers mortality is decreasing since 1995. Large bowel is the leading cancer site and shows increasing incidence and mortality trends (colon 1994-2007: incidence APC M +2.0 F +1.3, mortality M +1.7 F +0.2).

The aim of the study is to present stage distribution before screening start in 2006. The effect of missing data on stage monitoring is also investigated.

Methods

Over the period 2002-2006, 4185 cases (out of 4409 registered) were treated in the region. Anal cancers, morphologies other than adenocarcinoma, DCI (42) and DCO (7) cases were excluded. Stage information was assessed for 4034 cases. To explore determinants of stage, multinomial logistic models based on complete cases only, inclusion of missing categories, and datasets with missing data filled in by multiple imputation were fitted to data.

Results

Overall 305 cases (7.6%) were PTis N0 M0. 757 cases (19%) had stage IV disease. Stage was unavailable for 7.1% of cases and was undefined for additional 2.8% cases without nodal status (any T Nx M0). Stage at presentation was less favorable for cases <40 years and right colon. Missing stage did not change over the study period and by gender but was more frequent among the >80 years old (13%) and for rectum. Stage distribution was slowly improving over the study period in all models. Differences in stage at presentation between colon and rectum were reduced in the imputed models.

Discussion

An effort was made to expand the cancer registry collected information to detect changes over time of the main biological indicators of aggressiveness (e.g. staging). Baseline stage information for the pre-screening period was produced. Even a low % of missing overall, may hamper monitoring because missing data are often unevenly distributed across categories of study variables. Multiple imputation is useful to produce "missing adjusted" results.

P-1-11

MONITORING PROGRESS OF NATIONAL CANCER CONTROL IN THE NETHERLANDS

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Background

In the Netherlands, the National Cancer Control Programme 2005-2010 (NCCP) has been developed to manage and improve the quality of cancer control and care. In this programme, goals were set for all aspects of cancer control, from primary prevention and screening, care and cure to end of life care, education and research.

Methods

Indicators were defined to measure the achievements and a monitor instrument was developed to appraise the quality of cancer control and assess the achievements of the NCCP goals. It therefore supports priorities in policy, initiate quality improvements and (inter) national benchmarking, as it aligns with other indicator sets, e.g. Eurochip and the Ontario Cancer System Quality Index. The monitor reports national data on a selected set of indicators. This set includes various risk factors for cancer for primary prevention; Secondary prevention indicators concern the population-based breast and cervical cancer screening programmes; For cancer care, incidence, stage at diagnosis, compliance with guidelines, time from diagnosis to treatment, mortality, and 5 year relative survival are shown.

Results

The Monitor 2008 shows that, on national basis, survival of cancer patients increased during the last decade due to early detection (breast and prostate cancer) and improved treatment (e.g. colorectal and lymph node cancer). However, for lung cancer these improvements are lagging behind, as curative treatment is often not achievable. Only 13% of lung cancer patients is still alive 5 years after diagnosis. So, in the battle against cancer, prevention of lung cancer deserves top priority, and smoking cessation is the most important action.

Discussion

This NCCP Monitor provides information to the Steering Group and other policymakers to renew priorities in policy against cancer. It reinforces coordinated improvement activities on national, regional and local level on different aspects of cancer control in the Netherlands. For coming years, the monitor will be expanded with other indicators.

References

www.npknet.nl/monitor

P-1-12

HISTORY OF THE POPULATION-BASED CANCER REGISTRIES IN JAPAN

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Background

Cancer has been the leading cause of death in Japan since 1981. In spite of the various steps taken by the Ministry of Health and Welfare in Japan to reduce cancer incidence and mortality, the cancer death toll now exceeds 300,000, accounting for more than 30% of all deaths in the country. A national registry for monitoring morbidity and mortality of cancer is an essential support for strategies and policies to control the disease. We review the history of the Japanese cancer registration system in the hopes of activating new cancer surveillance systems and standardizing the registration process further.

Methods

The articles and the reports about population-based cancer registry that had been reported before were used as material.

Results

The first actual survey of the morbidity from cancer was conducted in Miyagi Prefecture for 1951 to 1953. Population-based cancer registries were started in 1957 in Hiroshima City and 1958 in Nagasaki City for follow-up the survivors of the atomic bombings. Public population-based cancer registries under the programs of cancer control by the prefectural government were started in Aichi and Osaka Prefecture in 1962. After the time when the Health and Medical Services Law for the Aged was enacted in 1983, registration began in many prefectures promptly. The population-based registries are conducted in 35 prefectures and 1 city as of 2007. The Research Group for Population-based Cancer Registration in Japan was organized in 1975. This research group has continued until now and has been making continuous efforts. To promote standardization of registry process and to improve the quality of registry data, the Japanese Association of Cancer Registries (JACR) was organized in 1992. The Japanese government implemented the Third-Term Comprehensive 10-year Strategy for Cancer Control was launched in 2004.

Discussion

Though the standardization of population-based cancer registries has dramatically improved through the activities of this Research Group, there are still problems with cancer registry that must be solved soon. The JACR has issued a declaration requesting a legal basis for reporting to cancer registries through the enactment of a "Cancer Registry Law". There are hopes that this new law, if enacted, will drastically improve the DCN, DCO, and IM ratios of the cancer registries in Japan.

P-1-13

WHAT SHOULD WE DO NEXT? RESULTS FROM A SERIES OF THREE SURVEYS OF POPULATION-BASED CANCER REGISTRIES CONDUCTED IN 2004, 2006 AND 2009 (PT. 1)

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Background

The importance of establishing a system for monitoring cancer incidence has been increasingly recognized in cancer control in Japan. The Japan Cancer Surveillance Research Group, established in 2003, aims to achieve the standardization of 8 items during the 10-year national cancer control program (2004-2013). The group has been actively promoting standardization and improving the quality of data for all Japanese population-based cancer registries.

Methods

In 2009, a questionnaire survey was conducted on the 47 prefectures of Japan to examine the current activities of population-based cancer registries. Incidence data in 2005 were also collected. The results were compared with two series of surveys conducted in 2004 and 2006. In this report, we present the results regarding 4 of the 8 items [(1) legislative authority, (2) data content and format, (3) data completeness and (4) data timeliness].

Results

Among the 47 prefectures, 35 operated population-based cancer registries in 2009. Several prefectures that did not operate a cancer registry indicated that they intended to start one. The following results regarding items (1) to (4) were obtained: (1) Legislative authority: 80% of registries had received official approval from the privacy protection committee of the local government; (2) Data content and format: 77% of registries use the standardized items reported from hospitals and 86% of registries submit all 12 items required by the National Cancer Center for monitoring the incidence at the national level. These indices improved over the course of the 3 surveys. (3) Data completeness: 44% of registries had an IM ratio greater than 1.75, 36% had a DCN less than 30% and 30% had a DCO less than 20%. Follow-up surveys for DCN cases were conducted by 46% registries. Although data completeness did not improve in the first 2 surveys (2004 and 2006), these indices showed improvement in 2009. (4) Data timeliness: at the time of survey, the latest incidence data available were from 2005 or later (a delay of 3.5 years or less) for 74% of registries.

Discussion

Attainment of standardization of the approval process, data content and format were observed. For next term (2010-2013), further improvement in data completeness is expected.

P-1-14

WHAT SHOULD WE DO NEXT? RESULTS FROM A SERIES OF THREE SURVEYS OF POPULATION-BASED CANCER REGISTRIES CONDUCTED IN 2004, 2006 AND 2009 (PT. 2)

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Background

The importance of establishing a system for monitoring cancer incidence has been increasingly recognized in cancer control in Japan. The Japan Cancer Surveillance Research Group, established in 2003 aims to achieve the standardization of 8 items during the 10-year national cancer control program (2004-2013). The group has been actively promoting standardization and improving the quality of data for all Japanese population-based cancer registries.

Methods

In 2009, a questionnaire survey was conducted on the 47 prefectures of Japan to examine the current activities of population-based cancer registries. Incidence data in 2005 were also collected. The results were compared with two series of surveys conducted in 2004 and 2006. In this report, we present the results regarding 4 of the 8 items [(5) data quality, (6) follow-up, (7) annual reporting, and (8) data use].

Results

(5) Data quality: The year of birth and sex items were fairly complete for all registries. 60% of registries had less than 1.5% incomplete data for primary sites. Registries that met the standards of unknown histological codes ($<30\%$), histological diagnosed cases ($\geq 75\%$) and unknown stages ($<20\%$) were 47%, 13% and 44%, respectively. Logical checks were performed by 70%. Regarding the comparison between 3 surveys, no obvious improvement was observed. (6) Follow-up: Follow-up of registered cases was conducted by 60% of registries. The percentage increased slightly compared with previous surveys. (7) Annual Reporting: Annual reports were issued by 89% of registries. Approximately half of all registries reported the incidence of newly diagnosed cancers in 2005. (8) Data Use: 89% of the registries used the incidence data to plan for cancer control in their administrative area.

Discussion

Standardization of annual reporting and data use was achieved. However, improvement in data quality and follow-up was not accomplished. We have collected data from all registries 4 times since 2006. Our next challenge will be improving data quality and follow-up by providing support to each registry and feeding-back the results of data checking using these data collection processes.

P-1-15

Withdrawal

P-1-16

CONFIDENTIALITY FOR POPULATION-BASED CANCER REGISTRIES IN JAPAN

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Background

It is essential that population-based cancer registries maintain the confidentiality of data about individuals. We investigated the confidentiality for population-based cancer registries in Japan, based on the confidentiality checklist for population-based cancer registration in Japan that the Japan Cancer Surveillance Working Group developed in 2009.

Methods

In September 2009, we asked all population-based cancer registries in Japan (36 registries) to complete a checklist with 128 items. All registries responded to our request.

Results

For 115 items, which excludes active registration items, the proportion of achievement in each registry varied considerably from 4.3% to 100%. Seventeen items were achieved in over 80% registries, but 19 items were achieved in less than 30% of the registries. Generally, items about the physical security of confidential paper records tended to be achieved well in almost all registries, but a few registries achieved several items for planning a registry code for confidentiality and work records.

Discussion

The results of this survey indicate considerable differences in efforts at confidentiality among population-based cancer registries in Japan, and suggest that technical and financial support is necessary for these registries with insufficiently complete confidentiality. This survey also shows that the checklist has several ambiguous terms, which require revision.

P-1-17

THE ESTABLISHMENT OF INDONESIA NATIONAL CANCER REGISTRY : A STRATEGY OF POPULATION BASED CANCER REGISTRY IN JAKARTA

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Background

Cancer is the world wide leading cause of death accounted for 7,4 million deaths in 2004. More than 70% of all cancer deaths occurred in low and middle income countries. To reduce the cancer incidence and mortality rate, WHO in 2008 developed the Cancer Action Plan. Indonesia as a country number four population in the world has to implement cancer control program based on evidence. Cancer Registry is the main tool of evaluating and monitoring of the program.

Methods

Evaluating of the existing cancer registry in Indonesia.

Brain storming and developing the new system of cancer registry in Indonesia Sites selecting as a pilot project.

Determining national estimate of cancer incidence (refer to IACR).

Population denominator (census 2005).

Results

Cancer Registry in Indonesia started in Semarang in 1970. In Jogjakarta in 1973 and in 13 centers of University hospitals in 1993. Despite the above mentioned activities the National Population based cancer registry has not been established yet.

The new strategy of cancer registry is divided on three steps; The first step is the Government determines policy. Decree of Ministry of Health in 2007 pointed out Dharmais National Cancer Center as National Cancer Data Center. The second step is to build capacity and network in several cities in Indonesia, Jakarta is determined as a pilot project. Jakarta is divided into 5 regions. The third step is implementing the system. The first round of the activities in the mid 2007 was in 40 hospitals in Jakarta; the second round followed by 36 hospitals, 10 laboratories and death certificates. Data of new cancer cases was collected from medical record from 2005 up to 2007. The data of cancer patients consist of social and tumor data and the follow up.

Discussion

After 2 years of activities, Jakarta as a capital city with 12 million population is not ideal to conduct population cancer registries. According to WHO, the registry should cover a size of population between one and five million. Jakarta Cancer Registry had only 40 part timer registrars in the first round of activities, the coverage only 13,42%. The second round of activities in mid 2009 the Government revised the system adding 13 personals of Epidemiologist and two medical doctors. The coverage of population cancer registry in the first three months in 2010 is 33%.

P-1-18

CANCERMONDIAL

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CANCERmondial (www-dep.iarc.fr) has been completely redesigned as one of the activities of the new Section of Cancer Information (CIN) at IARC, in response to the ever-growing demand for descriptive epidemiological data on the global cancer burden. Information is accessible through several applications developed within the Section:

1. GLOBOCAN provides access to the estimates (for 2008) of the incidence of, and mortality from major cancers in 182 countries of the world. It is possible to create tables showing numbers and rates for selected groups of populations or cancers, or to generate various types of graphs and maps. GLOBOCAN allows the production of cancer site and country specific fact sheets, and makes it possible to compute of the future burden of cancer in each country or region of the world based on demographic changes.

2. The CI5 (Cancer Incidence in Five Continents) databases provide access to detailed information on the incidence of cancer recorded by cancer registries worldwide in two formats:

- 2.1. CI5 I-IX presents the basic data published in the nine volumes of CI5.

- 2.2. CI5 Annual Detailed DataSet (ADDS) contains annual incidence for selected registries published in CI5, for the longest period available, and for major cancer sites. CI5 ADDS can be used for time trend analyses.

3. The WHO database provides the most recent cancer mortality information recorded in selected countries of the world. The WHO database can also be used for time trend analyses. A facility which permits the predictions of cancer mortality has been developed, using either short or long term methods. It is possible to predict the mortality from various cancers in around 50 countries of the world. The results are presented by age, together with corresponding prediction intervals. Also provided are the changes due to change in risk of dying from cancer, and due to change in the population structure.

Demonstrations of all these applications will be made available at the meeting.

**FIVE YEARS REPORT ON CANCER INCIDENCE IN ADEN
CANCER REGISTRY, YEMEN**

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Background

Aden Cancer Registry (ACR) is a population based cancer registry started its activities on cancer registration since 1997. The objective of the registry is to establish a reliable magnitude of cancer in the area covered by the registry. The first report was published in 2003. This article describes data from the second report that include cancer incidence of five years period (2002-2006).

Methods

Internationally accepted standardized cancer registration methodologies described by IACR and IARC were used. CanReg-4 using ICDO-3 and ICD-10 were applied in the processing and analysis of data.

Results

No difference in the overall incidence between the males and females (male to female ratio was 0.83:1) and age standardized rate (ASR) per 100,000 inhabitants was 30.2 for males and 31.1 for females. The five most common cancer were breast, leukemia, non-hodgkins lymphomas (NH Lymphoma), brain and Hodkings disease (16.6%, 12.6%, 7.8%, 5.2% and 4.4%, respectively). Among males, leukemia was the first followed by NH lymphoma, Hodgkin's disease, brain and liver. In females, breast was the first, leukemia, NH lymphoma, thyroid and brain cancer came later. The highest ASR for males (145 per 100,00 inhabitants) was observed at age 70-74 years whereas for females, two peaks (each 105 per 100,00 inhabitants) were equally noticed at age 60-64 and 70-74 years. Generally, females showed equal or higher incidence compared to males until age 55-59 where males reported higher incidence.

Discussion

The overall pattern of cancer incidence in this report is not much different from that in the previous report. Furthermore. the report generally indicates that the pattern of the most common registered cancer bears some similarities with the adjacent Gulf Cooperation Council States with which we share many characteristics despite some differences that warrant further investigation.

P-1-20

INCIDENCE OF CHILDHOOD CANCER IN ADEN CANCER REGISTRY, YEMEN (2002-2006)

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Background

Childhood cancer comprises a variety of malignancies with incidence varying worldwide by age, sex, ethnicity, and geography. These variations in the incidence of cancer, have provided important insights into cancer etiology. In Yemen, data regarding these cancers are very scarce. This paper aimed at describing data on childhood cancer registered in five years period in Aden Cancer Registry which is a population based cancer registry covers an area of around two million inhabitants.

Methods

All registered cancers for patient under 15 years in the period 2002-2006 were analyzed. Classification and coding were carried out using ICD-O 3 and ICD 10. The CanReg 4 package for cancer registry was used in the analysis. Validation checks of each entered data item was carried out to maximize data validity.

Results

Childhood cancer accounted for 11.6%. More cancers were registered for males (60%) compared to females (40%). The highest percentage was observed at age 5-9 among males (37.1%), and age 0-4 among females (43.6%). The most leading childhood cancer were ordered as follows: leukaemia, non Hodgkin's lymphoma, Hodgkin's disease, brain and neuroblastoma. Although both sexes showed similarities in the first five ranking cancers, they were differed in the relative frequency of each cancer.

Discussion

Despite that childhood cancer accounted for almost the same percentage relative to the overall cancer incidence, differences in the leading cancer order for both sexes and for each sex was observed compared to the previous five years report (1997-2003). Furthermore, differences with the pattern of childhood cancers in the Gulf Cooperation Council States is also clear. Further indepth analysis is obviously needed.

P-1-21

TWO PERIODS OF FIVE YEARS CANCER INCIDENCE IN ADEN CITY, YEMEN

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Background

Aden City is the commercial capital of Yemen with a population of 571,777 inhabitants. Cancer cases reported from the different health care facilities are registered in Aden Cancer Registry (ACR) as a population based cancer registry. This paper describes the incidence of cancer in two periods of 5 years time (1997-2001 and 2002-2006).

Methods

The data was analysed using the CanReg4 programme and the incidence rate was calculated based on mid-time total population in each period.

Results

Results showed reported cancer cases were 929 (439 males and 490 females) and 1146 (490 males and 656 females) in the period 1997-2001 and 2002-2006, respectively. However, male to female ratio was a bit higher in the second five year period (1:1.11 and 1:1.34, respectively).

Age standardized rate (ASR) per 100,000 inhabitants was 56 and 62.7 for males and 52.6 and 73.9 for females respectively. The five most common cancer incidence for males were non-hodgkins lymphomas [NH Lymphoma (4.3)], liver (4.1), esophagus (3.3), stomach (3.3), Hodgkin's disease (3.3) for the period 1997-2001 and NHL (4.9), leukemia (4.8), larynx (4.2), trachea/lung (4) and brain (3.4) for the period 2002-2006. The top five incidence cancer among females were breast, NHL, leukemias, brain & nervous and thyroid (16, 3.3, 2.4, 2.3 and 2.2) for the period 1997-2001 and breast, leukemia, esophagus, thyroid and NHL (26.5, 4.4, 3.2, 3.1, 2.7) for the period 2002-2006, respectively.

The highest ASR for males (381 and 464 per 100,00 inhabitants, respectively) was observed at age 70 - 74 years whereas for females (237, 317 per 100,00 inhabitants, respectively) at age 60 - 64 and 70 - 74 years.

Discussion

The findings, generally indicate that the pattern of the most common registered cancer bears some similarities with the adjacent Gulf Cooperation Council States with which we share many characteristics despite some differences that warrant further investigation.

**A REVIEW ON THE TRENDS OF FEMALE BREAST CANCER
IN THE AUSTRALIAN CAPITAL TERRITORY**

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Background

Female breast cancer remains a public health concern in most developed countries. Breast cancer is the most common cancer in females, and the highest cause of female cancer death in Australia. The aim of this study is to review trends in incidence, mortality and survival of female breast cancer in the ACT during 1995-2006.

Methods

Cases were extracted from the ACT Cancer Registry; counts and rates from other Australian states and territories were extracted from the AIHW's ACIM and GRIM books. Age standardised rates were calculated for incidence and mortality. The Period method was used to calculate the 5-year relative survival ratio for cases in the ACT diagnosed between 1 Jan 1995 and 31 Dec 2004 with follow up on 31 Dec 2004. Survival estimates from other Australian States and Territories were obtained from various cancer publications.

Results

The incidence of female breast cancer in the ACT has increased since 1995, however rates have remained stable since 2002. The incidence rate in the ACT was not significantly different from the national rate for most years, except 2000 and 2004. The mortality rate for female breast cancer in the ACT has decreased since 1995 and was similar to the national rate for most years. The 5-year relative survival ratio of women diagnosed with female breast cancer in the ACT was 91%.

Discussion

The incidence of female breast cancer has been increasing over time and is similar to national rates. However, mortality due to female breast cancer has been decreasing. The prognosis for women diagnosed with female breast cancer in the ACT is generally good.

TRENDS OF INCIDENCE AND MORTALITY OF CERVICAL AND BREAST CANCER AMONG MONGOLIAN WOMEN

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Background

The incidence of cervical cancer is generally low in China, moderate in Japan and somewhat higher in Korea and Mongolia. While breast cancer incidences in the region are generally relatively low, especially in Mongolia.

Cervical cancer ranks second of the leading cancers diagnosed among Mongolian women. Breast cancer is the most common cancer diagnosed among women.

Objective: To determine the incidence and mortality for cervical and breast cancers in Mongolia (2000-2008)

Methods

Data on cervical and breast new cancer cases diagnosed in 2000-2008 among women of Mongolia were actively collected by the Registry. Incidence and mortality rates were calculated as mean annual numbers per 100,000 females and were used descriptive study design.

Age-standardized incidence rates (ASRs) and age-standardized mortality rates (ASMRs) were calculated by the direct method from age-specific incidence and mortality rates, weighted to the World Population standard.

Results

Average in 2000-2008, cervical cancer was 9%, breast cancer was 2% of all cancers. But among female population who had cancers the cervical cancer occurred 18%, breast cancer 5% respectively. During these years, the incidence rate for cervical cancer increased from 6.6 to 15.5 cases per per 100,000 women, and the mortality rate increased from 3.0 to 4.0 cases per per 100,000 women. The incidence rate for breast cancer increased from 2.5 to 3.5 cases per per 100,000 women the mortality rate increased from 0.8 to 1.3 cases per 100 000 women respectively.

An in situ or 0 stage of cervical and breast cancers has been started to record since 2006-2007. But there is an tendency to increase percentage of diagnosing for I, II stages and decrease of III and IV stages.

The cervical cancer incidence rates are the highest in Dornod, Khentii, Gobi-Sumber aimags and Ulaanbaatar city. But cervical cancer mortality rates are the highest in Dornod, Dorno-gobi, Khentii, Sukhbaatar aimags. Incidence and mortality rates are the highest in Eastern region of Mongolia. Average in last 8 years (2000-2008), incidence and mortality rates of cervical and breast cancer are increasing 0.9-2 fold. Increasing of diagnosis I and II stages of cervical and breast cancers in last 3 years may be depends on the diagnosis improvement of diagnostic capacity and knowledge of population about prevention of cancers.

Discussion

Average in 2000-2008, cervical cancer was 9%, breast cancer was 2% of all cancers. But among female population who had cancers the cervical cancer occurred 18%, breast cancer 5% respectively. During these years, the incidence rate for cervical cancer increased from 6.6 to 15.5 cases per per 100,000 women, and the mortality rate increased from 3.0 to 4.0 cases per per 100,000 women. The incidence rate for breast cancer increased from 2.5 to 3.5 cases per per 100,000 women the mortality rate increased from 0.8 to 1.3 cases per 100 000 women respectively.

An in situ or 0 stage of cervical and breast cancers has been started to record since 2006-2007. But there is an tendency to increase percentage of diagnosing for I, II stages and decrease of III and IV stages.

The cervical cancer incidence rates are the highest in Dornod, Khentii, Gobi-Sumber aimags and Ulaanbaatar city. But cervical cancer mortality rates are the highest in Dornod, Dorno-gobi, Khentii, Sukhbaatar aimags. Incidence and mortality rates are the highest in Eastern region of Mongolia.

Average in last 8 years (2000-2008), incidence and mortality rates of cervical and breast cancer are increasing 0.9-2 fold. Increasing of diagnosis I and II stages of cervical and breast cancers in last 3 years may be depends on the diagnosis improvement of diagnostic capacity and knowledge of population about prevention of cancers.

P-1-24

ASWAN CANCER REGISTRY UNIT SEVEN YEARS DATA ANALYSIS

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Background

Aswan Cancer Registry Unit:

Aswan Cancer Registry Unit was founded in September 1998. It locates at the 3rd floor of Aswan Cancer Center as a one room with a very spectacular Nileview. The staff of the unit formed of Director and 2 employees. The Director, Dr. Amir Bishara had training in USA in University of California Irvine for 3 months in 1999, and much other international training in France, Ireland, Cyprus and Saudia Arabia.

The reference date is January 1st 1999.

On January 1st 2008 a national project for population based cancer registry started choosing Aswan to be the 1st governorate in this project.

Methods

The Data collected actively from the Ministry of Health Hospitals in Aswan City, Aswan Cancer Center, Teaching Hospital, Health Insurance Hospital and Health offices for Death Certificates. Also we collect data from pathology and other labs in Aswan. The other cities of the Governorate, some send us their data and other not. We can't collect data actively as there is no enough staff or fund to support transportation cost.

Seven years Data Analysis:

In the following report, there is a simplified analysis for the data collected in our unit from January 2001 till December 2007 with focusing on cases diagnosed as cancer and living in Aswan Governorate. Also we make special analysis for the commonest malignancy in Female (Breast) and in Male (Bladder).

Results

Between January 1st 2001 till December 31st 2007 we abstracts 7796 files. 28 are pending till now and 7768 cases are confirmed, 5095 of them from Aswan (65.6%), 2650 from outside Aswan (34.1%) and 23 (0.3%) Unknown.

For Aswan Cases 2484 Male 48.75 % and 2611 Female 51.25 %

The most common cancers are:

ALL Cases		
Site	Number	%
1 Breast	997	19.56
2 Bladder	527	10.43
3 Liver	356	6.89
4 Lung	273	5.36
5 Haemopoetic	271	5.32
6 Lymph Node	250	4.91
7 Colon & Rectum	214	4.20
8 Brain	210	4.12
9 Prostate	158	3.10
10 Ovary	131	2.57

The 5 common cancers in Male

Site	Number	%
1 Bladder	451	18.16
2 Liver	249	10.02
3 Lung	198	7.97
4 Prostate	158	6.36
5 Lymph Node	148	5.96

The 5 common cancers in Female

Site	Number	%
1 Breast	978	37.45
2 Ovary	131	5.02
3 Haemopoetic	127	4.86
4 Liver	107	4.09
5 Colon & Rectum	106	4.06

Discussion

This is a priliminary study in the cancer data in Aswan gonernorate showing results comparable with other regions in Egypt and some Middle ast countries. The important thing is that HCC is increasing in it srnk and showing that it is going to incrase in the comming few years (HCV and HBV).

P-1-25

TRENDS IN LIVER CANCER INCIDENCE BETWEEN 1985 AND 2009, KHON KAEN, THAILAND

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Background

The Khon Kaen Cancer Registry (KKCR), having both hospital and population-based registration, was established in 1984 in the Faculty of Medicine, Khon Kaen University. Liver cancer is the most frequent malignancy among Thais from northeastern Thailand, but there has as yet been no assessment of trends. This study to perform a statistical assessment of the incidence trend of liver cancer in Khon Kaen, Thailand, between 1985 and 2009.

Methods

Population-based cases of liver cancer registered between 1985 and 2009 were retrieved from the KKCR and cases with an ICD-O diagnosis (coding C22) were selected. Incidence trends were calculated using the Generalized Linear Model method (GLM), which generates incidence rate based logarithms.

Results

Of the 17,865 cases of liver cancer, males are affected two times more frequently than females. Three-quarters of the cases were between 45 and 69 years of age. According to medical practice, the basis of diagnoses was practically non-microscopic (91.6%) and the most common type identified was cholangiocarcinoma (17.7%). According to the percent change (PC) between 1988 and 2002. PC male and female of -2.48% and 3.97%, respectively. The annual respective percent change (APC) in the incidence rates between 1985 and 1989, 1990 and 1994, 1995 and 1999, 2000 and 2004, and 2005-2007 in males and females was (APC: +30.7, +28.8), (APC: -1.7, +0.07), (APC: +0.05, +5.75), (APC: -1.5, -0.2) and (APC: -4.3, -10.2).

Discussion

Apart from the first apparently high incidence, there has been no substantial change, up or down, in the APC. Further analysis of the initial period is needed to rule in or out any statistical artifact.

P-1-26

CANCER INCIDENCE IN NORTHERN THAILAND, 2003-2007

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Background

OBJECTIVE : To study cancer incidences of 4 provinces in Northern Thailand between 2003 and 2007 as well as estimated cancer incidence of Northern Thailand.

Methods

New cancer cases were collected from 4 cancer registries; Lampang, Lamphun, Phitsanulok and Chiang Mai cancer registries which represent 33% of the northern population. All death certificates were matched with the incident case records of all registries. Diagnosed cancer cases were grouped by the third version of the International Classification Diseases for Oncology and using the CanReg 4 program for data entry. All data were checked for duplication before analysis. The completely checked data were analyzed using program R.

Results

During the period of 2003-2007, the total number of new cancers was 85,062 cases; 40,872 males and 44,190 females. The age-standardized incidence rates (ASR) of all cancer sites were 125.7 per 100,000 populations among male and 119.4 per 100,000 populations among female. Among northern populations, lung cancer was the most common cancer in males (ASR=30.0) followed by liver cancer (ASR=24.4) and colorectal cancer (ASR=10.4). In females, the most common cancer was breast cancer (ASR=20.8) followed by cervix cancer (ASR=19.4) and lung cancer (ASR=16.7). Comparisons of 4 registries in northern Thailand, the highest ASR of all male cancers was found in Lampang (ASR=170.5) while the lowest ASR was found in Phitsanulok (ASR=119.4). Among females, the highest incidence rate of all cancers was found in Lamphun (ASR=163.8) while the lowest incidence rate was found in Phitsanulok (ASR=97.4).

Discussion

This study is the first study demonstrated cancer incidence of Northern Thailand. Lung cancer is the major problem among males whereas breast cancer does in female. Our findings are useful for prioritizing cancer control program and cancer research in the future.

P-1-27

Withdrawal

P-1-28

DECREASED PROSTATE CANCER MORTALITY OBSERVED IN SASEBO CITY, NAGASAKI, JAPAN WITH INTRODUCTION OF PSA SCREENING

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Background

Even though the prostate cancer incidence in Japan is low, at a level about one-tenth of that among males of African descent, incidence has recently shown a marked increase. Sasebo City, located in Nagasaki Prefecture, has conducted Prostate Specific Antigen (PSA) screening for those aged 50-79 years since 2003, with the aim of examining PSA screening efficacy.

Methods

We observed trends in prostate cancer incidence and mortality for both Nagasaki Prefecture and Sasebo City during the period from 1985 to 2008, using Nagasaki Prefecture Cancer Registry data. We also classified prostate cancer cases by diagnostic opportunity into two groups (cases detected via screening and those detected based on symptoms) and observed survival rate trends.

Results

There were 7,097 prostate cancer cases in Nagasaki Prefecture and 1,377 in Sasebo City during the period from 1985 to 2006, with 2,257 and 386 deaths reported, respectively, during the period from 1985 to 2008. Age-adjusted incidence started rising slightly in the mid-1990s for both Nagasaki Prefecture and Sasebo City, and then showed a marked increase since 2003. The relevant incidence peaked in 2004 in Sasebo City, thereafter tracking downward, and incidence peaked in 2005 in Nagasaki Prefecture, decreasing in 2006 and thereafter. Disparity in incidence between Sasebo City and Nagasaki Prefecture was observed in 2003 and thereafter, with Sasebo having 10-20 more cases per 100,000 population. Meanwhile, number of prostate cancer deaths remained unchanged at between four and six per 100,000 population in Nagasaki Prefecture, but this number decreased from eight in 2006 to two in 2007 in Sasebo City. With regard to five-year relative survival rates specific to diagnostic opportunity, increased survival rates were observed in 1989 and thereafter in each of the groups.

Discussion

Rate of PSA exposure in Sasebo City was low, at 25% over a five-year period, but the rapid increase followed decrease on incidence rates were observed. The decreased mortality was observed four years after PSA screening. It is important to observe the future trend of incidence and mortality on prostate cancer.

P-1-29

CHILDHOOD CANCER INCIDENCE IN TAIWAN, 2003-2007

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Background

Childhood cancer is uncommon, and the rarity of this group of diseases might be difficult to describe its incidence accurately without having access to population-based cancer data. In view of the above considerations, the purpose of this study was to describe the childhood cancer incidences with Taiwan Cancer Registry Database from 2003 to 2007.

Methods

Newly diagnosed cancer cases were registered by population-based cancer registry in Taiwan. A total of 2,636 children (aged 0-14 years) and 1,268 adolescents (aged 15-19 years) were collected in this study between January 1, 2003 and December 31, 2007. Childhood cancers are grouped according to the third edition of the International Classification of Childhood Cancer (ICCC-3). The age-specific incidence rates were calculated by age (0-14, and 15-19 years), gender and twelve ICCC-3 groups. Additionally, we stratified according to 5 age groups (<1, 1-4, 5-9, 10-14 and 15-19 years) for some tumors with a relatively large number of cases or unique in Taiwan. All rates are listed per 1,000,000 population and were age-standardized to the 2000 world standard population.

Results

The age-standardized incidence rate (ASR) of all childhood cancers was 135.7 per million (145.7 per million for boys and 124.9 per million for girls). The most common cancers were leukemias (29.2%), lymphomas (12.5%), and CNS neoplasms (11.7%). In all ICCC group combined, the age-specific incidence rates were 123.7 per million for children and 157.4 for adolescents. The highest incidence rates for acute myeloid leukemias, neuroblastoma, retinoblastoma, and hepatoblastoma were observed during infancy. The peak incidence rates for lymphoid leukemias and rhabdomyosarcomas occurred among children aged 1 to 4 years. Two peak incidence rates were shown in infancy and adolescents for astrocytomas and malignant gonadal germ cell tumors. The incidence rates of Non-Hodgkin lymphomas, hepatic carcinomas, and thyroid carcinomas increased gradually with age.

Discussion

This study is the first to characterize the incidence of childhood cancer by using the ICCC-3 coding scheme in Taiwan. Descriptive epidemiology of childhood cancers can be not only the basis of the project, implementation, and evaluation of cancer prevention, but also the significant clue about pathogenic factors for cancer research.

P-1-30

TRENDS OF COLORECTAL CANCER INCIDENCE AND MORTALITY IN FUKUI PREFECTURE, JAPAN

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Background

In Japan, colorectal cancer is one of the increasing cancers in incidence, so we have mass screening system for colorectal cancer to fall mortality. The aim of this study was to analyze trends of colorectal cancer and to consider the effective planning of cancer control in Fukui prefecture.

Methods

Fukui prefecture has population of 820,000, there were registered about 4,500 new cases of all sites and 750 cases of colorectal cancer per year. The age-adjusted incidence and mortality of colorectal cancer is characterized by data from the population-based cancer registry covering the years 1984-2004. We analyzed trends of colorectal cancer incidence and mortality with joinpoint regression analysis by SEER program. The 5-year relative survival rate founded in 1984-1996 are compared between screening-detected and clinically diagnosed colorectal cancer.

Results

Annual Percent Changes (APC) for incidence (1984-2004) were 0.39 (male) and -0.31 (female), and APC for mortality (1984-2004) were 0.16 (male) and -0.89 (female). The APC for both incidence and mortality among men and women were not significantly different from 0 ($p < 0.05$). The 5-year relative survival rate were significantly higher in mass screening group, but the dissociation between incidence and mortality was not noted among either men or women. The 5-year relative survival rate for colon cancer rose from 51.5% (1985) to 65.9% (2002) and that for rectal cancer rose from 56.0% to 63.1%.

Discussion

Mortality of colorectal cancer is not significantly decreasing in Fukui prefecture. One reason why that the annual rate of distant cancer (cancer that has metastasized to distant organs) has remained almost unchanged. Mass screening system seems to be effective for early diagnosis and early treatment of colorectal cancer. So we must continue to observe further trends in incidence and mortality for colorectal cancer, and to improve public participation in mass screening examinations.

**THE MORBIDITY AND TREND ANALYSIS OF CANCER
IN LANZHOU**

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Background

Cancer is a serious threat to human health, major diseases, is the 21st century, China and the world one of the serious public health problems, cancer incidence registration information system is to study the population morbidity, mortality levels, epidemiological characteristics and trends important basis for the Government developing cancer control strategies and basic clinical research to grasp the most basic data. Based on the cancer registration center in Gansu province in the 2005-2007 collection of cancer incidence data Lanzhou order to analyze the epidemiological characteristics and trends of malignant tumors, in order to provide important information for prevention and treatment of malignant tumors.

2005-2007 cancer incidence data from Lanzhou, Lanzhou City medical institutions at all levels, registration of new cases report card, report the range of the five district of Lanzhou City residence with malignant tumors (including benign tumors of the central nervous system) cases, death data from Lanzhou deaths registered medical institutions at all levels, report cards and the cause of death reporting system to monitor access to the cancer deaths in the information; population data from the Lanzhou Municipal Public Security Bureau, Bureau of Statistics. Three years covered by the registration number of the 1.6 million population of between -180 million, male and female ratio was 1.05:1.

Methods

Using registration database data of malignant tumors and population data in Lanzhou 2005-2007 to analyze crude incidence rate, China standardized rate, world standardized rate, cumulative rate (0-74 years old and the truncated rate; Using average annual growth rate to calculate the average growth speed.

Results

The average annual incidence rate of all cancer was 204.39 per 100 000 person in 2005-2007, The China standardized rate was 164.98 per 100 000 person, compared with the world standardized rate of 212.26 per 100 000 person, the truncated rate of 35-64 was 299.19 per 100 000 person. The cumulative rate (0-74 years old) was 26.96%. Compared to 2005, the morbidity, China standardized rate and the world standardized rate in 2007 presented the upward tendency, rose by 7.25%, 6.69%, 3.96% respectively and the average growth speed was 3.56%, 3.29%, 1.96% respectively; The age-sex-method-specific average annual incidence rate in 2005-2007, the age group 0 was the lowest incidence and the morbidity gradually rose with the growth of age, age group 75-80 reached a peak and then declined gradually. The morbidities of male were higher than female in every age groups except 0 and 20-45; The lung cancer was the highest average annual incidence rate, followed by stomach cancer, liver cancer, breast cancer, cervical cancer, rectal cancer, colon cancer, esophageal cancer, gallbladder cancer and bladder cancer, the first ten malignant tumors cumulatively accounted for 71.53% of total morbidity; Lung and breast cancer ranked the first in men and women; Each cancer began with 15-25 age group and 70-75 reached the peak then declined in subsequent years.

Discussion

The malignant tumors have become the major diseases which influenced people's health in Lanzhou, lung, breast, stomach, liver and colon/rectum cancer, cancer should become the major carcinoma of prevention and control, the elderly are the high risk group for cancer prevention so we should strengthen the prevention study of lung, breast, cervix, gallbladder etc cancer especially.

P-1-32

INCIDENCE AND PATTERN OF CANCER IN URBAN AND RURAL DIBRUGARH DISTRICT, ASSAM, INDIA

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Background

Dibrugarh district is one of the eastern most districts of Assam situated in the eastern corner of India where a Population Based Cancer Registry (PBCR) was established by the Indian Council of Medical Research (ICMR). The cancer data for the period 2004-2007 were analysed to produce data on incidence and pattern of cancers among urban and rural population of the district. The findings were expected to reveal clues about the burden and pattern of cancer in the population so as to present a base for further research in cancer etiology and control.

Methods

In addition to the base institution, there are 25 hospitals and nursing homes, 20 diagnostic centres and 12 death registration centres in the district. Only invasive cancers were registered. Non-resident cases, benign tumours and in-situ cancers were not registered.

Results

A total of 3208 incident cancer cases were registered in the district during the period 2004-2007 of which 1855 (57.8%) were men and 1353 (42.2%) were women. The proportion of cases diagnosed by microscopic verification for men and women were 84.4% and 84.9% respectively; while DCOs in men and women were 44.7% and 28.0% respectively. The CRs for urban men (123.8) and urban women (120.7) in the district were the second highest in India. Compared with AARs world wide, the AAR for mouth cancer (19.2) and hypopharynx cancer (15.8) among urban men and that of gallbladder cancer (17.1) among urban women were found to be highest. 59.5% of total cancers in men and 27% in women were found to be associated with tobacco use.

Discussion

Information on incidence and patterns in urban and rural population within a defined geographical area is an important basis for determining priorities for cancers control in the population. There are some very peculiar and deep-rooted local habits in the population which along with high prevalence of tobacco habits and abundant presence of pesticides in air, water and soil could be responsible for high occurrence of certain cancers in the district.

P-1-33

MOLECULAR CLASSIFICATION IN BREAST CANCER: CLINICOPATHOLOGIC FEATURES IN A POPULATION-BASED STUDY IN GIRONA, SPAIN

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Background

Breast cancer (BC) is a highly heterogeneous disease from clinical, genetic and phenotypic points of view. BC are stratified into distinct molecular subtypes based on gene expression profiling and/or immunophenotypic characteristics. The immunohistochemical markers of breast cancer not only were crucial information to guide clinical management but also represent a valid alternative to costly genotyping assays. The aim of this study was to describe clinicopathologic features of breast cancer and prognostic data in women resident in the Girona province.

Methods

All cases of invasive female breast cancer (International Statistical Classification of Diseases and Related Health Problems: C50.0-C50.9) diagnosed during 2005 were included in the study. Clinical and biological characteristics of the tumour and tumoral factors were analysed. Molecular subtypes were defined by immunohistochemical markers (estrogenic and progesterone receptors and Her2/neu).

Results

368 invasive breast cancers were analyzed. 61.2% were Luminal A subtype, 10.3% Luminal B, 7.9% Basal-like, 6.2% Her2/neu. Luminal A included the highest percentage of patients >70 years, the highest proportion of stage I tumours and well/moderately differentiated lesions, Her2/neu was more frequent in postmenopausal women and showed the highest percentage of positive lymph nodes and advanced stage cases.

Discussion

Based in this comprehensive population-based study on breast cancer molecular subtypes, it is evidenced that in our area the Luminal A subtype is the most common one, followed by the Luminal B, the Her2/neu and the Basal-like subtype, as occurs in the majority of the developed countries.

Funding

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P-1-34

RARE CANCERS IN EUROPE

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Background

Due to the low frequency of patients with rare cancers, caregivers encounter specific problem in decisions on diagnosis, treatment, health care organization and clinical research. To overcome these problems the Surveillance of Rare Cancers in Europe (RARECARE) project aims to provide an operational definition of "rare tumours" resulting in a list of tumours meeting that definition. Based on the list the burden of rare cancers is described with the indicators: incidence, survival and prevalence.

Methods

A working group including epidemiologists, pathologists and oncologists developed a definition considering both, clinical relevance and frequency of tumours. Data from 65 European population based cancer registries was analysed. A list of tumours reporting number of cases and crude incidence rates during the period 1995-2002 was built. This list was hierarchically structured in two main layers based on various combinations of ICD-O morphology and topography: layer 1) families of tumours (relevant for the health care organisation), layer 2) tumours clinically meaningful (relevant for clinical care and research).

Results

The international consensus group agreed to define rare cancers on the basis of a cut off based on incidence (<6/100,000/year). Accordingly 194 tumour entities, within the two main layers, were selected. Data, including the basic indicators, on incidence, survival (absolute and relative) and fifteen year prevalence is now available at www.rarecare.eu. The overall result was that about 20% of all cancer cases in EU are considered as rare cancers.

Discussion

No similar large-scale and comprehensive analyses of rare tumours have been reported. Our results disclose the burden of rare cancers in Europe and confirm that despite the rarity of each individual cancer type, rare tumours significantly contribute to the total cancer burden in Europe.

TRENDS IN THE INCIDENCE OF HEPATOCELLULAR CARCINOMA, INTRA- AND EXTRAHEPATIC CHOLANGIOCARCINOMA IN TAIWAN

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Background

Primary liver cancer (PLC) is the first leading cancer in Taiwan and nearly 90% of PLC cases are hepatocellular carcinoma (HCC). Recently, the incidence rates of intra- and extrahepatic cholangiocarcinoma (ICC & ECC) have shown divergent trends among several countries. In this study, we attempted to describe the incidence rates of HCC, ICC and ECC in Taiwan using National Cancer Registry Database from 1979 to 2007.

Methods

The Taiwan Cancer Registry, a population-based cancer registry established in 1979, has been significantly improved since the initiation of a national health insurance system in 1995. After 2002, ICD-O-3 was used for a standard coding manual instead of ICD-O-FT. Therefore, all cancer types were coded or converted to ICD-O-3 for the analysis. A total of 87,159 incidence cases of HCC, ICC and ECC were included from 1979 to 2007. Cancer incidence rates were calculated by gender, four age groups (0-49, 50-59, 60-69 and 70+ years) and six time periods (1979-1982, 1983-1987, 1988-1992, 1993-1997, 1998-2002 and 2003-2007). All rates are listed per 100,000 population and were standardized to the 2000 world standard population.

Results

The age-standardized incidence rates (ASRs) of HCC for male and female increased from 1979 (4.85 and 0.98 per 100,000, respectively) to 2005 (52.97 and 19.06 per 100,000, respectively); then gradually decreased to 48.55 and 17.19 per 100,000 for male and female in 2007, respectively. Additionally, the incidence rates of ICC and ECC in males steadily increased between 1979 (0.12 and 0.12 per 100,000, respectively) and 2007 (2.90 and 0.98 per 100,000, respectively). Among female, the ASRs increased from 1979 to 2007 for ICC (0.07 to 2.57) and ECC (0.11 to 0.73). With specific morphology coding allowed for no microscopic confirmation in ICD-O-3, a dramatically increasing rate was observed between 2001 and 2002. The age-specific incidence rates for HCC, ICC and ECC in both sexes increased markedly across all age groups except for aged 0-49 years from 1979-1982 to 2003-2007.

Discussion

This study for the first time describes the secular changes and age patterns in the incidence of HCC, ICC and ECC in Taiwan. Incidence rates of HCC have started to decrease from 2005, whereas rates of ICC and ECC have still increased. Trends by age, gender and period may suggest different etiologies for these cancers.

P-1-36

MAJOR GYNECOLOGICAL CANCERS IN YOUNGER WOMEN IN TAIWAN

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Background

In Taiwan, the national cervical and breast cancers screening program has been launched for women over 30 years of age in 1995 and 2002, respectively. However, little epidemiologic research addressing these gynecological cancers for women aged less than 30 years has been reported in Taiwan. The objective of this study was to describe trends in incidence and pattern of histological types of cancers of breast, cervix, corpus uteri, and ovary among younger women using Taiwan Cancer Registry Database.

Methods

A total of 231,783 women with newly diagnosed cancer of gynecological sites, including breast (ICD-O C50), cervix (C53), corpus uteri (C54), and ovary (C56), were collected between 1979 and 2007 from National Cancer Registry Database. Age-specific incidence rates were listed per 100,000 population and calculated by age groups (15-19, 20-24, and 25-29), time periods (1979-1982, 1983-1987, 1988-1992, 1993-1997, 1998-2002 and 2003-2007) and major histological types. Differences in distribution by age groups (<30 and 30+ years) and major histological types were evaluated using χ^2 statistics. Two-sided $p < 0.05$ was considered statistically significant.

Results

7,758 (3.4%) were less than 30 years of age at time of diagnosis. Among these younger women, the most common primary site was cervix (44%), followed by breast (28%), ovary (24%), and corpus uteri (4%). Women with these gynecological cancers had an increasing incidence rate with period except for invasive cervical cancer from 1993-1997 to 2003-2007. For cancers of breast, cervix and corpus uteri, women aged 25-29 years had a significantly higher incidence rate than those in women aged 15-19 and 20-24 years. The most common histological types in younger women were infiltrating ductal carcinoma (69%) for breast, squamous cell carcinoma (62%) for cervix, adenocarcinoma (41%) for corpus uteri, and germ cell tumors (41%) for ovary. Compared with women aged 30 years and more, relatively more mucinous adenocarcinoma cases of ovarian cancer among women less than 30 years of age were diagnosed than serous adenocarcinoma cases ($p < 0.0001$).

Discussion

The risk of developing a gynecological cancer rises with increasing age with the majority of women aged 25-29 years. Cancer prevention and education programs for younger women should continue to include breast, pelvic exams and Pap test screening.

P-1-37

INCIDENCE OF LPL/WM IN JAPAN AND TAIWAN BASED ON DATA FROM POPULATION-BASED CANCER REGISTRIES, 1996-2003

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Background

Lymphoplasmacytic lymphoma/Waldenstrom's macroglobulinemia (LPL/WM) is a chronic B-cell neoplasm characterized by IgM monoclonal gammopathy and infiltration of lymphoplasmacytic cells into bone marrow, lympho nodes, and spleen. Although there has been evidence to support a role for racial diversity in the development of other lymphoid malignancies, there are few epidemiological data for LPL/WM, particularly from Asian countries. We evaluated the incidence patterns of LPL/WM in Japan and Taiwan.

Methods

Japanese data were obtained from the Japan Cancer Surveillance Research Group that consisting of 15 population-based cancer registries. Taiwanese data were obtained from the Taiwan National Cancer Registry System consisting of nationwide hospitals with 50 or more beds. Cases newly diagnosed with LPL (ICD-O-3 code 9671/3) and WM (ICD-O-3 code 9761/3) during 8-year period from 1996 to 2003 were used to calculate the incidence rate. Sex- and age-specific incidence rates, and male-to-female incidence rate ratios (M/F IRRs) were computed. Age-standardized rates per 100,000 person-years (PY) were calculated using direct standardization to the IARC 2000 world population weights.

Results

There were 280 cases in Japan and 56 in Taiwan. The median age at diagnosis was 73 years in Japan and 67 years in Taiwan. The crude age-specific incidence increased sharply with age, especially over 65 years in both countries. The M/F IRR was 3.1 in Japan and 2.1 for Taiwan. Age at diagnosis and the M/F ratio were almost similar to data from US and England. Age-standardized rate per 100,000 PY was 0.043 (0.071 for males and 0.023 for females) in Japan, and 0.031 (0.041 for males and 0.020 for females) in Taiwan. The age-standardized rate of LPL/WM in Japan and Taiwan were low, nearly one-tenth of the rates in that in Asians living in the US (0.2-0.3 for per 100,000 PY during 1996-2004).

Discussion

This report suggests that not only genetic but also environmental factors may be involved in the development of LPL/WM.

P-1-38

Withdrawal

**INCIDENCE AND MORTALITY RATE OF GASTRIC CARDIA
CANCER FROM 1985 TO 2004 IN LINZHOU, CHINA**

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Background

Linzhou City (formerly LinXian County) is situated in northwest of Henan province in the Taihang mountain area, China. Linzhou city is a rural area with a total population about one million, 70% of who work in agriculture. The climate is dry with little rainfall and the main crops are wheat, maize and other cereals.

Incidence of gastric cancer in Asia remains the highest in the world. In Linzhou, gastric cancer is the second most common cancer in terms of both incidence and mortality. Among the stomach cancer in Linzhou the gastric cardia cancer is account for 60%. In this article the incidence and mortality rate of the cardia cancer were described and comparisons of both rates in difference period were done based on the data of Linzhou Cancer Registry, a population based cancer registry.

Methods

All incidence and mortality records for gastric cardia cancer during year of 1985-2004 were drawn from data of Linzhou Cancer Registry and grouped by sex, age, diagnosis year and then linked to corresponding population data. The incidence and mortality rate of the cardia cancer were calculated and the age-adjusted rates were calculated by direct method using world standardization population. The change of the rates in difference periods from year 1985 to 2004 was compared and annual percentage change (APC) was calculated.

Results

The age-adjusted incidence of cardia cancer decreased from 73.03 to 64.81 per 100, 000 men and from 38.80 to 29.14 per 100,000 women from period of 1985 - 1989 to period of 2000 - 2004, which the APCs were -1.01% and -1.96% respectively. The age-adjusted mortality rate decreased from 67.67 to 51.40 per 100,000 men and from 31.65 to 22.80 women. The APCs were -1.71% and -2.33% in men and women respectively.

Discussion

A large number of studies have indicated that there is an association between risk of cardia cancer and socioeconomic status. Being of low socioeconomic status increases the risk of cardia cancer. The incidence and mortality of cardia cancer have presented a declining trend in the population of Linzhou City. This trend will continue with the development of social economy, elevation of living standard and improvement of condition on public health and medical services.

P-1-40

TEMPORAL AND GENERATIONAL TRENDS IN SUBTYPES OF ORAL AND PHARYNGEAL CANCER IN SOUTH EAST ENGLAND

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Background

Many previous studies have shown that the main risk factors in oral and pharyngeal cancer are tobacco smoking and alcohol consumption. Additionally, recent research has highlighted an association between human papillomavirus (HPV) infection and incidence of oral and pharyngeal cancer especially cancer of Waldeyer's ring.

Methods

Patients diagnosed with oral and pharyngeal cancer (C00-C07, C09-C14) were identified from the Thames Cancer Registry database. Age at diagnosis was categorised into 5-year groups and period of diagnosis into 5-year periods. Birth cohort groups were calculated by subtracting the midpoint of the age group from the midpoint of the period. Poisson regression age-period and age-cohort modelling techniques were used to estimate an age-standardised incidence rate ratios of each period and cohort in each subtype of cancer. Furthermore, similar techniques were fitted to Waldeyer's ring group (base of tongue, tonsil and oropharynx) and other oral cavity group (tongue, gum, floor of mouth, palate, other and unspecified part of mouth, oral cavity and pharynx) to compare the incidence in these two groups.

Results

There was an increase in incidence rates in cancer of the base of tongue and the tonsil in the subsequent younger birth cohorts born from 1940 onward. Although incidence rates in most groups increased, that of Waldeyer's ring group was twofold higher than other oral cavity group in the birth cohort born in 1960.

Discussion

One of the reasons why the incidence rates in cancer of the base of tongue and the tonsil increased might be increasing prevalence of HPV infection. Public vaccination programmes against HPV in girls has been performed in many European countries, which may reduce the incidence of oral and pharyngeal cancer as well as cervical cancer in women.

OVERCOMING THE IDENTIFICATION PROBLEM IN COHORT ANALYSIS BY USING AKAIKE'S BAYESIAN INFORMATION CRITERION (ABIC)

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Background

Cohort analysis is a statistical method of disentangling age, time period, and cohort effects from data classified by age and period. This method is useful to understand the changes in cancer incidence and mortality as well as people's opinion. However, it is well known that cohort analysis suffers from an identification problem - the linear components of age, period, and cohort effects cannot be separated without prior information on these 3 effects. The key idea to overcome the identification problem is to control the linear components to the least possible extent in order to realize the principle of parsimony.

Methods

Assuming Poisson distributions for cancer incidences or mortalities, a Bayesian age-period-cohort (APC) model was constructed with a prior distribution expressing a gradually-changing-parameter assumption that the weighted sum of squares of the first-order (not second-order) differences in adjacent effect parameters was minimized. An optimal model was selected by minimizing Akaike's Bayesian information criterion (ABIC), which is a kind of Akaike's information criterion (AIC) applied to a marginal likelihood.

Results

The proposed method was applied to sets of cancer incidence data acquired in 1968-2003; the data were obtained from Osaka Cancer Registry, and we successfully estimated the age, period, and cohort effects on cancer incidences at various sites.

Discussion

Other than the problem associated with age, period, and cohort effects, there exists another identification problem with regard to cohort effects and age-by-period interaction effects because the former are mathematically included in the latter. The ABIC approach is very flexible for handling an extended model with interaction effects.

P-1-42

**TRENDS OF LUNG AND LIVER CANCER INCIDENCES
IN OSAKA, JAPAN, 1968-2003:
AGE-PERIOD-COHORT ANALYSES**

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Background

Both lung and liver have been leading cancer sites in Osaka, Japan, while the age-standardized incidence rates have levelled off lately for lung, and turned to decrease for liver. The age-specific incidence rates showed distinct trends; dips in the lung among males born around 1935-1939, and peaks in the liver among the middle and elderly born around 1930-1934. Analysis using statistical models has rarely been done in Japan.

Methods

We used Nakamura's Bayesian Poisson age-period-cohort (APC) model which has overcome the identification problem in APC model and enabled us to separate the three effects. Cancer incidence data during 1968-2003 was provided from Osaka Cancer Registry.

Results

For the lung, the age effect increased linearly while the period effect was small. The cohort effect for males was noticeable; it increased rapidly until the 1900s birth cohort and then levelled-off. Subsequently a dip in the incidence for the late 1930s birth cohort was observed. The cohort effect then increased again and peaked with the 1950s cohort. The latest cohort effects (1950-60s) were still striking. For the liver in males, the period effect was significant from the mid-1980s to the mid-1990s, and decreased. In females, the period effect decreased from 2000. For both sexes, a significant cohort effect was observed among those born in the early 1930s, but the effect subsequently decreased.

Discussion

We confirmed the existence of cohort effects. For the liver, the highest cohort effect was consistent with the generation of the highest HCV prevalence. Prevalence of HCV has been decreasing, thus the incidence of liver cancer will continue to decrease. For the lung, the observed dip at the mid-1930 birth cohort was consistent with the generation who had limited access to tobacco after World War II. The early 1950s birth cohort peaked at highest risk of the incidence. These generations will be over 60 years old in the near future. The incidence of lung cancer will start to increase in the near future.

P-1-43

TRENDS OF STOMACH AND COLON CANCER INCIDENCES IN OSAKA, JAPAN, 1968-2003: AGE-PERIOD-COHORT ANALYSES

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Background

Stomach and colon cancer are leading cancer sites in Osaka, Japan. Since the 1960s, the age-standardized incidence rate has been decreasing for stomach cancer, and increasing for colon cancer, while the incidence for colon appeared to have peaked in the 1990s. Interpretation of these trends using age-period-cohort (APC) models has rarely been done.

Methods

We used Nakamura's Bayesian Poisson APC model which can overcome the identification problem and separate the three time-dependent effects. Cancer incidence data during 1968-2003 was provided from the Osaka Cancer Registry.

Results

The general trends in the results of APC analyses for the two cancer sites were comparable for male and female. For stomach, the age effect increased linearly with increasing age, while the period effect showed a minimal change since the 1960s. The cohort effect increased from the 1880s through the early 1900s, and constantly decreased thereafter. For colon, the age effect increased linearly with increasing age, while the period effect increased from the 1970s through the 1990s, and decreased thereafter. The cohort effect showed a constant increase from the 1880s through the 1950s.

Discussion

From the results, the constant decrease in the stomach cancer incidence was explained as a result of decreasing cohort effect. In part, this finding may be interpreted as a combined effect of the decreases in salt intake and in the prevalence of *H. pylori* infection. The increasing incidence of colon cancer was explained as a result of increasing period and cohort effects, which may have been caused by increased intake of meat, increasing prevalence of obesity and decreasing physical exercise in more recent calendar years and birth cohorts.

P-1-44

TRENDS OF CANCER INCIDENCE AND MORTALITY IN OSAKA, JAPAN, AGE-PERIOD-COHORT ANALYSES FOR CANCERS OF THE BREAST AND CERVIX UTERI

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Background

Both breast and cervical cancers have been leading ones in women. Both incidence and mortality for female breast have increased remarkably for the last several decades, while the incidence increased more and the gaps between them levelled off lately. For cervix uteri, incidence and mortality have decreased almost in parallel. Both cancers are good candidates for secondary prevention; however, the coverage of screening was less than 20% in Osaka, 2004.

Methods

We used Nakamura's Bayesian Poisson age-period-cohort (APC) model which has overcome the identification problem in APC model and enabled us to separate the three effects. Cancer incidence data during 1968-2003 was provided from Osaka Cancer Registry. Cancer mortality in Osaka during 1968-2007 was based on vital statistics.

Results

The age effect on breast cancer incidence increased linearly and levelled off among women aged 50 and over. The period effect was more remarkable than the cohort effect on incidence. The period effect on mortality, however, was almost negligible. For cervix uteri, the age effect peaked among the 40-44 years old and then decreased. The period effects on incidence and mortality were small. The cohort effect on incidence decreased among those who were born in 1890s-1950s, but turned to increase thereafter.

Discussion

For female breast cancer incidence, the increasing trend seemed to be mainly linked to the period effect and partly to the cohort effect; thus breast cancer incidence will continue to increase in Osaka. For cervix uteri, decreasing trends in both incidence and mortality were ascribable mainly to the decreasing cohort effects; however, the incidence will increase in the near future as the cohort effect turned to increase in younger generations. Early detection and treatment against these cancers in Japan were not as successful as the US or the UK, since their period effects on mortality were small.

SEX DIFFERENCES IN BLADDER CANCER IN JAPAN

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Background

Bladder cancer (BC) is the common malignancy in urinary system; especially BC represents the 8th most frequent tumor diagnosed in Japan among males. It is known that differences in incidence, mortality and survival according to sex are relatively large. The objective of this study was to describe the sex differences of BC incidence, mortality and survival according to age, extension of tumor, geographical region and topography based on analysis of cancer registry data from Monitoring of Cancer Incidence in Japan (MCIJ) project.

Methods

Individual BC incidence data using ICD-10 codes (C67) between 1993-2004 were obtained from 31 regional registries and logically checked. Finally data set in 17 registries, a total of 38,300 males and 12,183 females, were identified and used for analysis. Mortality statistics were obtained from the ministry of health and welfare.

Results

Quality indicators are calculated by sex; DCO% was M 12.5 to F 20.8, MV% was M 82.4 to 73.3. Females had significantly higher proportion of stage advanced tumors; localized M 89.5% to F 57.3%, regional Im metastases or adjacent organ metastases M 4.8% to F 37.3%, distant metastasis M 6.1% to F 4.5%. This difference was obvious even in age groups. Males with urothelial BC are more frequently observed than females (96.0% to 92.8%), in other words, squamous and glandular tumors and sarcomas occurred often in females. Females with BC had a worse prognosis than male patients; 5 year relative survival rate showed almost 10 point difference between two sexes. Some leveling of incidence and mortality rates was observed during the observation period, and sex ratio was also stable, 4 to 5 in incidence and around 3.5 in mortality.

Discussion

Substantial sex disparities in BC presentation are observed. The stage difference at diagnosis can explain partly these differences; however pathogenic mechanisms, treatment modality, social factors and sex-specific data quality should be considered as well. The BC control approach should be adjusted according to sex.

P-1-46

SECULAR TREND IN MORTALITY FOR LIVER DISEASES IN TAIWAN, 1971-2008

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Background

Liver disease is a major health problem in Taiwan. In 2008, the chronic liver disease and liver cirrhosis ranked the eighth major cause of death, and the mortality rate was 21.4 per 100,000 population. The liver cancer ranked the second cause of cancer-related death, and the mortality rate was 33.3 per 100,000 population. Although liver disease is an important disease in Taiwan, there have been only a limited number of trend analyses of mortality using population-based data in Taiwan, and the national statistics regarding mortality are estimated data. In the present study, mortality data from death registration database, which is the most accurate in Taiwan, were used to observe trends in mortality rates.

Methods

Sex-age-specific mortality rates of liver disease from 1971 through 2008 were obtained from the Taiwan death registration database, which was used to compute and graphically present annual percentage changes in age-specific and age-adjusted mortality in Taiwan. The age-adjusted mortality rate was standardized to the 2000 world standard population.

Results

The age-adjusted mortality rate of chronic liver disease and liver cirrhosis in 1971, 1996, and 2008 was 35.6, 32.7, and 24.9 per 100,000 for men and 16.0, 12.7, and 8.9 per 100,000 for women. The age-adjusted mortality rate of liver cancer in 1971, 1996, and 2008 was 27.8, 43.5, and 40.8 per 100,000 for men and 10.4, 14.2, and 14.1 per 100,000 for women. In the analysis, there were slight decreases in mortality of all liver disease combined for both sexes from 1971, but the trend was not significant in liver cancer. Mortality in women appeared to significantly decrease, whereas mortality in men had been increasing until 1996, and then began to significantly decrease thereafter. In an analysis by disease, the mortality of chronic liver disease and liver cirrhosis significantly decreased in both sexes. However, the mortality of gallbladder and extrahepatic bile ducts cancer and liver cancer significantly increased. The trend was also observed in both sexes.

Discussion

Liver disease mortality has been declining in recent years, and the reduction in mortality from 1996 has significantly affected the trends in Taiwan. Urgent liver disease control planning by the Taiwan government is necessary, especially for cancers of the liver.

P-1-47

**CHANGING EPIDEMIOLOGY OF COLORECTAL CANCER IN
HONG KONG IN THE PAST QUARTER-CENTURY: MEN
ON THE RISE AND WOMEN ON THE FALL**

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Background

Colorectal cancer is the second most common cancer in both genders in Hong Kong, responsible for 17% of all new cancer cases. Nearly 50% of patients presented with advanced disease (stage III or IV) at diagnosis. With rapid economic growth in Hong Kong over the past few decades, the lifestyle of most citizens changes substantially. This study examined the trends of colorectal cancer in both incidence and mortality rates for different age groups.

Methods

Data were obtained from the population-based Cancer Registry during the period of 1983-2007 and were categorized into four age groups. Long-term trends were analyzed using joinpoint regression models. The Annual Percent Change (APC) in incidence and mortality rates, and the time points where trends changed, were estimated.

Results

A substantial increase in both incidence and mortality in men was observed over the 25-year period. The age-standardized incidence and mortality rates per 100,000 males increased from 33.8 and 15.3 respectively in 1983 to 42.6 and 16.8 respectively in 2007, resulting in a significant APC of 0.8% for incidence ($p < 0.001$) and 0.6% for mortality ($p = 0.001$). For women, incidence rates increased by 1.2% per year ($p = 0.003$) from 1983-1994 but then declined by 0.7% per year ($p = 0.018$). Mortality rates steadily increased by 0.9% per year ($p = 0.004$) from 1983-1998 and declined significantly by 2.1% per year ($p = 0.005$) thereafter. There was considerable variation across age groups.

Discussion

There were substantial increase of incidence and mortality in men while in women, the decline in both incidence and mortality were obvious, suggesting intrinsic sex differences for certain etiology factors. The current study provides not only a baseline to assess our efforts in public education to promote primary/secondary prevention and early presentation, but also a stimulation to look for possible sex specific etiological clues which may affect the direction for future planning against this disease.

P-1-48

RISK OF CYTOLOGIC ATYPICAL GLANDULAR CELLS OF UNDETERMINED SIGNIFICANCE IN GYNECOLOGIC MALIGNANCIES

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Background

To investigate the relationship between screening status, clinical characteristics and risk of gynecologic malignancies, and types of gynecologic malignancies in women with cytologic diagnosis of atypical glandular cells of undetermined significance (AGC-US).

Methods

Totally 8,281 women were diagnosed as cytologic AGC-US for the first time in their lives in the nationwide screening population during January 1, 1995 to December 31, 2004. They were divided into screened (5,386 women) and unscreened (2,895 cases) groups according to their screening status. The followed-up histological reports were retrieved for analysis.

Results

There were total 323 women developing gynecologic malignancies during the followed-up period including 271 incident cases of invasive cervical cancer (ICC), 40 incident cases of uterine cancer, and 12 incident cases of ovarian cancer during a mean follow-up of 1.9 years and 50,740 person-years. The previous screening status is a strong risk predictor of developing invasive gynecologic malignancies (HR 1.69, 95% CI 1.20-2.37, $p=0.0027$) after adjusting age, educational status, and hospital setting. The biological gradient of gynecologic cancers by age is found in the unscreened group, but it is not noted in the screened group. Compared with general screening population, a significant larger proportion of women with a first time of cytologic AGC-US developed invasive gynecologic malignancies (ICC, $p<0.01$; uterine cancer, $p<0.01$; ovarian cancer, $p=0.01$).

Discussion

We conclude that women with cytologic AGC-US, especially those first diagnosed having AGC-US, those with older age, lower educational status, longer previous Pap smear interval, or even without receiving Pap smear before, were more likely to develop gynecologic malignancies. They should be closely followed, and the physicians should carefully examine the female reproductive tract comprehensively.

P-1-49

LIVER CANCER AND LUNG CANCER TRENDS IN JAPAN AND CHINA

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Background

Liver cancer and lung cancer are frequent malignancies in East Asia, and they represent the leading causes of cancer mortality in Japan and China. The purpose of the present study was to describe time trend of liver and lung cancer incidence and mortality rate between Japan and China.

Methods

Thirteen population-based cancer registry data were provided as a part of the Monitoring of Cancer Incidence in Japan (MCIJ) project. Five of population-based cancer registry data were provided by National Office for Cancer Prevention and Control, National Centre for Cancer Registries, China. We calculate liver and lung cancer incidence and mortality rates among over 40 years of age (grouped by 5-year age groups). Liver and lung cancer incidence and mortality trends by birth cohorts are compared between Japan (1993-2004) and China (1988-2005).

Results

Incidence rates for liver cancer by birth cohort among males showed a peak in 1930-1933, 1913-1918 in Japan and China, respectively. Incidence rate for lung cancer by birth cohort among males had the first peak in 1918 in both countries and a dip in 1938 in Japan and in 1943 in China. The second peak appeared in 1953 in Japan and in 1958 in China. The liver and lung cancer mortality rate showed similar trend in incidence rate in both countries except lung cancer among Chinese males (The first peak in 1918, a dip in 1938 and the second peak in 1948).

Discussion

The trends of liver cancer and lung cancer in Japan and China showed different birth cohort effect. Such birth cohort effects may be related to the trends in risk factor such as hepatitis B and C virus infection or tobacco smoking.

P-1-50

TRENDS IN CANCER INCIDENCE AMONG SOUTH ASIANS IN ENGLAND, 1986-2004

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Background

Studies on cancer in migrants help determine the influence of lifestyle and genetic factors on cancer risk. This study aimed at quantifying cancer incidence among South Asians, the largest ethnic minority in England. For the first time, it has been possible to estimate incidence trends in this minority in the entire national population.

Methods

South Asian ethnicity was assigned to all patients diagnosed 1986-2004 in the population-based National Cancer Registry of England, using SANGRA (South Asian Names and Groups Recognition Algorithm). Population denominators by ethnicity were derived from the 1991 and 2001 censuses. Incidence by ethnicity was estimated for the 20 most common cancers. Flexible multivariable Poisson models were used to investigate incidence trends in South Asians and non-South Asians, adjusted for age and socio-economic deprivation.

Results

Overall cancer incidence in South Asians was half that in non-South Asians. For individual cancers, incidence trends and patterns by age and deprivation differed widely between ethnic groups. Lung cancer incidence in South Asians has not fallen, as it has done in non-South Asians. Colorectal cancer incidence rose steeply among South Asians between 1986 and 2004. Breast and gynaecological cancers, the most common among South Asians, showed rising incidence, but remain less common than in non-South Asians. The deprivation gaps in cancer-specific incidence were absent, or much less marked among South Asians than non-South Asians.

Discussion

Overall cancer incidence is rising in South Asians, but remains lower than in non-South Asians. That, combined with patterns in cancer-specific incidence, supports the concept of transition in cancer incidence among South Asians living in England. This yields clear implications for the cancer care system of England and its management of the ageing South Asian population.

**TRENDS IN INCIDENCE OF UTERINE CANCER IN JAPAN
BASED ON DATA FROM 11 POPULATION-BASED
CANCER REGISTRIES**

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Background

Age-adjusted uterine cancer mortality decreased until the early 1990s, after which it reached a plateau. The purpose of this study is to describe the incidence of uterine cancer according to invasive cervical cancer and corpus cancer by histological type in a Japanese population.

Methods

Cancer incidence data for the 1993-2005 period from population-based cancer registries were collected by the Japan Cancer Surveillance Research Group. We used data from eleven registries that include criteria for data quality. Incidence rates were estimated and age-adjusted to the 1985 Japanese model population using direct adjustment. A regression model was applied to the trends in incidence in order to estimate the annual percentage change.

Results

For cervical cancer, the most common histological type was squamous cell carcinoma, whereas the most common for corpus cancer was adenocarcinoma. Histology classified as adenocarcinoma account for 13% of cervical cancers (invasive cancers) and 73% of corpus cancer. Age-adjusted incidence of adenocarcinoma increased in both cervical and corpus cancer. On the other hand, squamous cell carcinoma, which accounted for 63% of cervical cancers, did not increase during the study period. The age-adjusted incidence of adenocarcinoma of cervical and corpus cancer per 100,000 women increased from 0.9 and 3.0 in 1993 to 1.5 and 5.8 in 2005 respectively. Estimated annual percentage change was 4.4% (95% CI: 2.3, 6.5) for cervical cancer and 5.5% (95% CI: 4.6, 6.3) for corpus cancer.

Discussion

The epidemiological features of cervical cancer differ from those of corpus cancer. Therefore, they should be considered separately. However, it is difficult to classify them using only mortality data. According to the present findings, uterine cancer NOS (C55) accounted for 8% of all invasive uterine cancers. The present study demonstrates the importance of using cancer registry data to evaluate cancer control programs, such as cancer prevention and screening.

P-1-52

THE INCIDENCE TRENDS OF HYPOPHARYNGEAL AND ESOPHAGEAL SQUAMOUS CELL CARCINOMA IN TAIWAN

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Background

The incidence of oral and pharyngeal (including oral cavity, oropharynx, and hypopharynx) carcinoma and esophageal squamous cell carcinoma has been reported to increase in recent two decades in Taiwan. Increasing alcohol intake, betel quid chewing, and smoking were considered to be associated to the increased trends. In recent population-based study in Taiwan, the risk of developing second primary esophageal cancer was showed to be highest in hypopharyngeal cancer among oral and pharyngeal cancer. According to the anatomic relationship and sharing the common risk factors, we were interested in the relationship of incidence trends of hypopharyngeal squamous cell carcinoma and esophageal squamous cell carcinoma.

Methods

A population-based study was conducted using the database from Taiwan Cancer Registry between 1979 and 2007. Patients with hypopharyngeal squamous cell carcinoma, esophageal squamous cell carcinoma, and hypopharyngeal squamous cell carcinoma with second primary esophageal squamous cell carcinoma were identified and age-standardized incidence rates of that were calculated by gender and age.

Results

(Pending) We expected to have the similar incidence trends of hypopharyngeal and esophageal squamous cell carcinoma. The incidence trends of hypopharyngeal squamous cell carcinoma with second primary esophageal squamous cell carcinoma will also be compared.

Discussion

In this study, we tried to demonstrate the association between hypopharyngeal and esophageal squamous cell carcinoma. Field cancerization by major risk factors may explain the possibly similar incidence trends.

P-1-53

INCIDENCE OF UTERINE CERVIX CANCER IN INCHEON, SOUTH KOREA : 1997-2007

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Background

Incidence of uterine cervix cancer in Korea was relatively higher than that in other oriental country such as China and Japan in the past. However, the incidence of it has been changed rapidly these days. The purpose of this study was to evaluate the trend of uterine cervix cancer incidence in Incheon for eleven years.

Methods

We used Incheon cancer registry (ICR) data of uterine cervix from 1997 to 2007. It was made based on the Korean Nation-wide health insurance and Korean Central Cancer Registry (KCCR) data and death profiles from National Statistical Office. We have compared percentage of uterine cervix cancer patients among female cancer population in Incheon with that in Nation-wide cancer registry data each year. Crud incidence rate, Age-Standardized Ratio (ASR) and M/I ratio by age was investigated as well. We have also analyzed the changing rate of five leading female cancer in Incheon each year.

Results

Uterine cervix cancer has been the most common cancer (22.1%) in Incheon and KCCR data in female before 1997. From 1998 to 1999, 17.7% -18.1% of total woman cancers were uterine cervix cancer, but it was decreased up to 11.9% in 2007 in Incheon. Therefore, uterine cervix cancer became a third common cancer in 2007. The ASR was also decreased form 31.7 to 26.0 in the same period. According to the KCCR data (nation-wide data), decreasing slope of percent of uterine cervix cancer incidence was steeper than that of ICR data. More than 20% of patients among female cancers were uterine cervix cancer in 1997, however, it was decreased up to 5% in 2007 in KCCR data. When we evaluated crude incidence of cervix cancer by age range, bimodal peak was founded at the early forties and late fifties. We could find M/I ratio was increasing as patients grow older.

Discussion

Even though decreasing rate was low compared to KCCR data, uterine cervix cancer incidence has been also decreased rapidly from 1997 to 2007 in ICR.

P-1-54

Withdrawal

P-1-55

GENDER DIFFERENCES IN LARYNGEAL AND HYPOPHARYNGEAL CANCERS INCIDENCE IN SPAIN

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Background

In Europe, Spain has the highest laryngeal cancer incidence rates among men and hypopharyngeal cancer incidence rates are also high. However, the incidence of these cancers among women is low. In this context, the aim of this study was to analyze the incidence trends of larynx and hypopharynx cancers in Spain by gender and to compare it with smoking prevalence and alcohol consumption trends.

Methods

We selected the Spanish cancer registries having at least 10 years of activity and we calculated the age-standardized incidence rates (world population standard). We analyzed the incident cases for the period 1991-2001. We obtained the smoking prevalence from the National Health Surveys of the Spanish government. For alcohol consumption we used the Global Alcohol Database of the World Health Organization. Trends of cancer incidence, smoking and alcohol consumption were analyzed using a log-linear joinpoint regression.

Results

We observed 10043 laryngeal cancer cases and 1433 hypopharynx cancer cases. Cases among males accounted for 98% of the total, for both types of cancer. The analysis of grouped data from the seven registries revealed statistically significant reduction in laryngeal cancer incidence among men (Annual Percentage Change - APC = -4.21) and non significant increase in women (APC = 0.59). Smoking prevalence data analysis revealed similar trends. For hypopharyngeal cancer, among men, the results were consistent with alcohol consumption trends, first there was a 10.67% increase per year and then a reduction, statistically significant, -7.21% and an increase in women 2.88% per year.

Discussion

In Spain, larynx and hypopharynx cancers incidence increased among women and decreased among men in recent years. The changes identified for laryngeal cancer seem to be related to smoking, while the hypopharynx cancer trends are more related to alcohol consumption trends, but other risk factors need to be evaluated.

P-1-56

ANALYSIS OF INCIDENCE/MORTALITY RATIO BASED ON NAGASAKI CANCER REGISTRY: IF WE USE THE TOTAL MORTALITY THAT INCLUDING ALL DEATH-CAUSES

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Background

Incidence/Mortality ratio (I/M ratio) is one of the indexes for cancer control. Incidence data are obtained from cancer registry and mortality data are derived from the Vital Statistics. Not all patients with cancer die of cancer, therefore the total mortality of the cancer patients would be greater than the mortality reported in the Vital Statistics. In this study, we calculated two types of I/M ratios; one was calculated with the cancer mortality, and the other was computed with the total mortality. We compared the two I/M ratios.

Methods

Subjects were the patients diagnosed as stomach, lung, liver, colon, breast cancers and registered in Nagasaki Cancer Registry from 1985 to 2004 and patients died of cancer and registered in the Vital Statistics from 1985 to 2007. We calculated two types of I/M ratios and investigated the trends by type.

Results

The number of all-death causes (type 1) was less than that derived from cancer (type 2) for the initial years. The length of such period was the longest for breast. For I/M ratios calculated by type 1 and 2, those of lung (Male: 1.17, 1.27 Female: 1.32, 1.41) and liver (M: 1.13, 1.27 F: 1.13, 1.27) were low. Those of breast (3.44, 4.69) were high. For differences between I/M ratios, those of lung (M: 0.10 F: 0.08) and liver (M: 0.14 F: 0.14) were small. Those of breast (1.25) and colon for male (1.35) were distinct.

Discussion

Nagasaki Cancer Registry had been promoting for some initial period from 1985. Many patients with good prognosis cancer such as breast wouldn't die for the initial period so that it was the reason why type 1 was less than 2. I/M ratios of lung and liver were close to 1.0 and it suggested poor prognosis. Those of breast were high and it indicated good prognosis. From the differences of I/M ratios, it is suggested that many patients with lung or liver cancer die of the cancer, meanwhile those with breast or colon cancer for male die of other causes. Further investigations on I/M ratios would reveal the important characteristics for each cancer prognosis.

P-1-57

MALE BREAST CANCER: A POPULATION-BASED COMPARISON WITH FEMALE BREAST CANCER BASED ON DATA IN THE MONITORING OF CANCER INCIDENCE IN JAPAN PROJECT

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Background

Because of its rarity, male breast cancer is often compared with female breast cancer.

Methods

We obtained cases in 31 population-based cancer registries and population data from Database of the Japan Cancer Surveillance Group for breast cancers diagnosed from 1993 through 2004. Demographic and tumor characteristics including sex, age at diagnosis, stage and grade were compared and contrasted between male and female breast cancer. Trends in age-standardized rates (ASR) using world population of breast cancer incidence in males and females were characterized using joinpoint analysis.

Results

The Database of MCIJ had a combined total of 177,401 in situ and invasive cases with 712,504,896 person-years of follow-up all people residing in the catchment areas of population-based cancer registries in the MCIJ during the year 1993 through 2004. Males composed 0.74% (n = 1,308) of all breast cancer cases. Male compared with female breast cancers had older age at diagnosis, ie. mean age at diagnosis (standard error (SE)) , 67.3 (0.34) versus 57.3 (0.03). Age-standardized incidence rates overall were more than 100-fold lower for men than for women, ie, 0.21 (SE, 0.001) versus 31.38 (SE, 0.008) per 100,000 person-years. Tumor characteristic including stage and grade were similar in men and women. The ASRs were stable overtime for men, whereas those increased over time for women. The estimated annual percentage change of the ASR was 1.48% per year (95% confidence interval, 0.76% to 3.77%) for men and 2.95% (2.66% to 3.25%).

Discussion

We observed appreciable difference in age at diagnosis and the trends of breast cancer incidence overtime among Japanese men and women.

P-1-58

SURVIVAL OF CANCER PATIENTS DIAGNOSED IN 2000-2002 IN POLAND

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Background

The survival rates are a unique tool allowing for quality evaluation of widely defined health care and the effectiveness of cancer treatment. The presented survival rates are the first in Poland analysis of cancer survival rates for the whole Polish population.

Methods

The analysis of survival rates were conducted basing on the database of new cancer cases registered with the Polish National Cancer Registry in years 2000-2002. The data, which have been analyzed, included 308259 patients aged 15-99. The survival rates were calculated by Hakulinen method according to programme SURV3.

Results

The 5-year relative survival rates, estimated on the basis of cases registered in years 2000-2002 in Poland, amounted to 33% among men and 52% among women. In the male population the highest 5-year survival rates were registered for the following cancer sites: testis (88.7%), thyroid gland (76.8%), Hodgkin's lymphoma (71.5%) and prostate (65.2%). The lowest rates were observed for the following cancer sites: larynx (5.6%), liver (7.9%), gallbladder (10.8%) and lung (10.8%). For the female population the highest survival rates were registered for the following cancers: thyroid gland (90.7%), Hodgkin's lymphoma (77.6%), corpus uteri (77.1%) and breast (75.0%). The worst prognosis was for cancers of: gallbladder (8.6%), larynx (9.9%), liver (11.0%) and lung (15.7%). The 5-year survival rates in Poland are lower than the average rates for Europe (EUROCARE-4) by 10 percentage points. The Polish survival rates for particular cancer sites are lower than the average European rates by 0.5 to 26 percentage points.

Discussion

The differences between the survival rates for Poland in comparison to the rates obtained in the EUROCARE-4 study result mainly from the different cancer incidence structure (the higher percentage of cancer with bad prognosis), poorer infrastructure of oncological patient's care, short history of prevention and screening programmes, worse access to diagnostic and treatment procedures and no wide-spread use of treatment standards.

P-1-59

IMPACT OF SOCIO-DEMOGRAPHIC AND CLINICAL FACTORS ON OESOPHAGEAL CANCER SURVIVAL, ASSAM, INDIA

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Background

The incidence and mortality of oesophageal cancer are high in Assam, India. No study has been conducted so far to assess the survival of oesophageal cancer in Assam, which may be considered as a key measure to assess the burden of the disease in the population. This research work was undertaken to study the survival of the oesophageal cancer with respect to different demographic, treatment and disease characteristics relevant to this region.

Methods

An analytical study was conducted using a historical cohort and information from the medical charts of patients with oesophageal cancer in Assam Medical College Hospital (AMCH), Assam. Out of 233 patients' diagnosed between 1st January 2004 and 31st December 2005 in AMCH, 178 patients were followed for whom addresses were available. The data were analyzed using Kaplan Meier product limit estimator, log-rank test and the Cox regression model.

Results

The average survival time was estimated to be 10.33 months (95% C.I. 7.86 to 12.88). The survival of Patients belonging to the lower socio-economic group was worst with average survival time of 5.53 months (95% C.I. 4.373 - 6.694) and adjusted hazard ratio of 2.79 (95% C.I. 1.30-5.98) in comparison to higher socio-economic group. About 13% of the patients remains untreated whose average survival time was 3.33 months only (95% C.I. 1.82 - 4.846), significantly less than the treated patients. The adjusted hazard ratio of the untreated patients was 4.54 (95% C.I. 2.25 - 9.16). Patients treated in Assam was experiencing a 2-fold risk of dying than that of the patients treated in other places having better facility of treatment of India.

Discussion

The survival of oesophagus cancer was low in Assam. Socio-demographic status, treatment and stage of cancer were important factors influencing the survival of oesophageal cancer.

P-1-60

A 5-YEAR RELATIVE SURVIVAL RATE FOR PROSTATE CANCER PATIENTS DIAGNOSED BETWEEN 1998 AND 2000 IN GUNMA, JAPAN

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Background

In Gunma Prefecture, a population-based cancer registry was established in 1994. The death certificate only (DCO) rate in the Gunma Cancer Registry was 39.4% in 2006. As a result of the establishment of the "Cancer Control Act" in June 2006, "cancer care hospitals" were designated. In Gunma Prefecture, 11 hospitals were designated as cancer care hospitals, where cancer registry is mandatory. The number of cases registered in the population-based cancer registry has rapidly increased also in Gunma Prefecture, and the DCO rate dropped to the 20% range in only 3 years. Especially, for the prostate cancer, PSA screening has been vigorously conducted and the follow-up rate for the patients was 100%, and DCO rate was 9.4% in Gunma (1998-2000).

Methods

The 5-year relative survival rate for prostate cancer (C61) diagnosed between 1998 and 2000 in Gunma was calculated using the data of the Gunma Cancer Registry.

Results

The 5-year relative survival rates for prostate cancer in Gunma Prefecture were: 100% (959 cases) for localized tumors, 87.6% (126) for regional tumors, and 54.1% (323) for distant metastases. The clinical stage was unknown for 69 cases. The overall 5-year relative survival rate was 95.9% (1,477).

Discussion

Based on the data from 11 population-based cancer registries in Japan, the crude incidence rate for prostate cancer between 1998 and 2000 was 28.8 per 100,000 population. The 5-year relative survival rate for prostate cancer (C61) in Gunma Prefecture was higher than that reported by six population-based cancer registries in Japan of 75.5% (1997-1999), and comparable to that reported by the US SEER Program (1996-2003) of 98.1%. Age-adjusted mortality rate under age 75 (C61) in Gunma has been below the national average since 2007, and the crude incidence rate of prostate cancer in Gunma is higher compared to other regions. Further evaluation is necessary to determine whether this is a consequence of PSA screening.

P-1-61

CANCER PATIENTS SURVIVALS IN HOLYCROSS REGION (POLAND) -IN COMPARISON OF TWO PERIODS:1995-2002 AND 2003-2007(PRELIMINARY RESULTS)

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Background

In Poland only the Holycross Cancer Registry (HCR) in Kielce has started to provide systematic analysis of 5-year cancer survival rates aiming at monitoring the trends in survival related to the development of the Holycross Comprehensive Cancer Centre (HCCC), which has been in service since 2002 for the population of about 1,3 inhabitants living in urban and rural areas.

The aim of the study was to analyse the trend of 5-year relative survival rates of selected cancer sites in two periods of time: 1995-2002 related to the period before the opening of the HCCC and 2003-2007, when HCCC fully developed its activities.

Methods

Analysis based on HCR incidence in 1995-2007 of colon, rectal and lung cancers in both sexes and female breast, cervix and corpus uteri cancer. Patients were followed up to the end of year 2009. Hakulinen's and Brenner's methods were used for the 5-year survival rates and results were expressed in %. Methodology applied was exactly the same as in the EURO CARE Project.

Results

In each cancer sites the 5-year relative survival rates increased in the period, respectively: colon from 43 to 54, rectum 39 - 52, lung 12-13, breast 70-79, cervix 60-66, corpus uteri 75-82. However, results will be recalculated within the frame of EURO CARE-5 Project.

Discussion

Systematic monitoring of 5-year survival data implemented in HCCC demonstrated a marked improvement of prognosis that corresponded with an increasing activity of HCCC.

P-1-62

SURVIVAL IN SELECTED LEADING CANCER SITES IN METRO MANILA AND RIZAL PROVINCE, PHILIPPINES

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Background

Two sets of 5-year relative survival rates among Philippine populations, and compared to other populations, were recently published.

Methods

Two population-based registries, the Philippine Cancer Society-Manila Cancer Registry and the Department of Health-Rizal Cancer Registry, had been providing the essential data for cancer control in the country. Two sets of randomly selected incident cases were actively followed up, Set A from Metro Manila alone(1993-2002) was compared to United States ethnic groups (Filipino-Americans, Whites - SEER 13) and Europeans (EUROCare-4), and Set B from Metro Manila plus Rizal province (1994-2002) was compared to African, Asian and Central American populations. Population-specific life tables were used to compute 5-year age-standardized relative survival rates (RSR).

Results

Set A revealed the following 5-year RSRs: stomach 27.3%, colorectum 40.2%, liver 8.5%, lung 12%, leukemia 5.2%, breast 58.6%, cervix 45.4%, ovary 49.5%, thyroid 82.4%. Philippine RSRs were lower compared to United States and European residents in sites for which effective methods for early detection/diagnosis/treatment are available (breast, cervix, colorectum, thyroid). Set B showed that the breast 5-year RSR had decreased to 47% when Rizal province was included, but not in the large bowel (40%). Philippine breast cancer RSR was higher than in the Gambia (12%), similar to Uganda (46%) and India (52%), and lower than China (82%), Saudi Arabia (64%), Singapore (76%), South Korea (79%), Thailand (63%), Turkey (77%), and Costa Rica (70%).

Discussion

Differences in RSRs may be attributable to varying levels of cancer awareness, socioeconomic barriers, and health care system effectiveness.

P-1-63

**TRENDS OF GASTRIC CANCER DEPTH OF INVASION
AND SURVIVAL RATE IN FUKUI PREFECTURE**

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Background

Gastric cancer is the 2nd most common cancer related death after lung cancer in Fukui Prefecture. Although the age standardized incident rate of gastric cancer have been decreasing, absolute number are increasing. Survival is a direct index of progress in cancer diagnosis and treatment, while there are some imitations. We studied depth of invasion at diagnosis and survival of gastric cancer in Fukui Prefecture.

Methods

In Fukui Prefecture, gastric cancer was registered for about 800 per year between the years 1984-2005. Age adjusted incidence rates and mortality rates were calculated using the World Population as a standard. The 5-years relative survival rate of gastric cancer was calculated for different depth of invasion (m, sm, mp, ss, se) and calendar periods (1985-1990, 1991-1996, 1997-2002). DCO is not contained in the object of the calculation of the survival rate.

Results

The percentage of DCO is about 3-4%. Age adjusted incidence rates of gastric cancer in Fukui decreased from 57.7 to 46.7 and mortality rates also decreased from 23.3 to 16.5. Percentage of early gastric cancer (depth of invasion, m and sm) was increased. The 5-years relative survival rate of gastric cancer was improved from 54% to 62%.

Discussion

Both mortality and incidence of gastric cancer showed decreasing trends and decrease in the mortality was higher than in the incidence in Fukui. The decline in gastric cancer mortality is related to decrease in the incidence and improvement in survival.

P-1-64

UP-TO-DATE LONG-TERM SURVIVAL FOR CERVIX, CORPUS UTERI AND OVARY CANCER PATIENTS IN FUKUI, JAPAN: AN APPLICATION OF HYBRID ANALYSIS

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Background

It is one of the important tasks of population-based cancer registries to provide up-to-date long-term survival. Long-term survival rates calculated by traditional method (cohort analysis) were outdated, because we can only calculate to use the data of patients diagnosed 5 or 10 years ago. Period analysis, which can estimate long-term survival using up-to-date cancer data, was proposed by Brenner and has been widely used to estimate up-to-date long-term survival in many countries.

Methods

We calculated long-term survival for cervix, corpus uteri and ovary cancer patients diagnosed in 1993 to 2005 and followed-up until the end of 2008. In Fukui, recording incident cases delayed 3 years. So we applied hybrid approach which is applicable in situations with delayed recording of incident cases. We calculated 5- and 10-year relative survival (RS) for patients diagnosed in 1993-98 (cohort 93-98) and 1999-2003 (5-year only, cohort 1999-03) using the traditional (cohort) method and estimated 10-year survival for patients followed-up in 2004-2008 using hybrid approach (hybrid 04-08).

Results

For cervical cancer, survival curve of cohort 99-03 and that of hybrid 04-08 were closed. 10-year RS of cohort 93-98 was 64.1% (95% CI: 57.1-70.2%) and that of hybrid 04-08 was 70.3% (61.0-77.8%). For ovary cancer, 10-year RS of cohort 93-98 was 43.5% (36.4-50.3%) and that of hybrid was improved to 51.0% (41.8-59.6%). For corpus uteri, there was not large difference between survival curves for cohort 93-98 and hybrid 04-08.

Discussion

Observed improvement of survival for ovary cancer may be due to development of chemotherapy. Paclitaxel was approved as effective for treatment of ovary cancer patients around 2000 and used as standard treatment. Cervical cancer screening was widely promoted and the proportion of localized patients was increased. Therefore survival for all stage was improved. For corpus uteri, the number of patients was too small to gain stable results.

P-1-65

**AN HOSPITAL-BASED SURVIVAL STUDY OF ENDOMETRIAL
CANCER FROM MUMBAI, INDIA**

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Background

Globally it is estimated that there are about 0.2 million new endometrial cancer cases (Globocan, 2002). The highest incidence are observed in US (22.8 per 10⁵) followed by Malta (18.7) and Czech Republic among others. Rates are low (< 6) in Asia. The ASR in India are very low, ranging from 1.0 in Barshi to 2.8 in Chennai. Although there are studies on survival analysis reported in other parts of the world, there are fewer studies from India.

Methods

The present study was carried out at the Tata Memorial Hospital (TMH), Mumbai, India. During the year 1998-2002, of the 661 endometrial cancer cases diagnosed, 310 cases, treated in TMH were considered as eligible entrants for the study. Five-year survival rates using life-table method were estimated.

Results

62% of patients were above the age of 50 years, 41% were reported as localized disease. 31% were treated by surgery alone, 55% by surgery and radiotherapy, and remaining by other combination treatment. 22% patients had diabetes history. The 5-year Overall-survival rate was 92%. Patients who were aged "< 50 years", non-diabetic (93%), with no family history (93%) of cancer, localized-disease (85%) and only surgically treated (95%), had better survival compared to their counterparts. Number of pregnancies didn't show any difference in survival rates.

Discussion

The present study on endometrial cancer suggests that patients non-diabetic, no family history, localized disease have better outcome. Surgery showed the best outcome. A prospective clinical study will help in determining the important prognostic indicators for survival, especially with the newer treatment technologies available now.

P-1-66

**ESTIMATED SURVIVAL RATES FOR PROSTATE CANCER
PATIENTS : AN HOSPITAL-BASED STUDY FROM
MUMBAI, INDIA**

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Background

Prostate cancer is common in elderly men, especially in western countries, and incidence is rising, including low-risk populations. In India, the age-standardized rates vary between the registries. There are fewer studies from India reporting on prostate cancer survival.

Methods

The present study was carried out at the Tata Memorial Hospital (TMH), Mumbai, India. During year 1999-2002, of 850 prostate cancer cases, 371 new cases, treated in TMH were considered as eligible entrants for the study. Five-year survival rates using life-table method were estimated.

Results

The patient population was distributed uniformly over the three age groups. A larger proportion of the patients were diagnosed at "metastatic stage" and hormone treatment was most common. 20% patients had history of diabetes and 40% with hypertension. The 5-year Overall survival rate was 64%. Survival was 55%, 74% and 52% for " ≤ 59 yrs", "60-69 yrs" and " ≥ 70 yrs" respectively. Non-diabetic (70%), hypertensive (74%), with family history (80%) of cancer, with localized-disease (91%) and treated with surgery, either alone or in combination, (91%) had better survival. Tobacco use didn't show any effect on survival in this study.

Discussion

The present study showed that prostate cancer patients with known non-diabetic, hypertensive and localized disease at diagnosis have better outcome. Local treatment with either surgery or radiation achieves a reasonable outcome in prostate cancer patients. A more detailed prospective study will be helpful in understanding the prognostic indicators for survival especially with the newer treatment technologies available now.

THE ROLE OF HORMONAL AND GROWTH FACTORS IN THE SURVIVAL OF YOUNG BREAST CANCER IN INDONESIA

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Background

It has been observed that lack of estrogen receptor (ER) and over-expression of human epidermal receptor 2 (HER-2) in breast cancer with age less than 35 years are more likely having poor prognosis. Incidence of younger age breast cancer in Indonesia is higher than West Country. Thus, this study was initiated to find the survival of younger age breast cancer and related influence factors especially hormonal and growth factor.

Methods

We retrospectively analyzed 59 consecutive breast cancer patients with age less than 35 years who came to "Dharmais" National Cancer Center between 2003 and 2006. We reviewed the medical records and identified several hormonal risk factors of breast cancer, clinical characteristics, ER and HER-2 expression. Kaplan Meier study was used to analyze the median survival time.

Results

The youngest patient was 21 years old. As a hormonal risk factors of breast cancer, we found 13.6% had menarche under 12 years, 26.8% used hormonal contraceptive, 40.7% had no child, and 43.4% had body mass index more than 23. The stages found were stage I (15.3%), stage II (39%), stage III (30.5%), and stage IV (15.3%). Ductal invasive carcinoma was the most frequent of histological type (83.1%). Moreover, 71.2% patients had lack expression of ER expression and 22% patients had HER-2 over-expression. There were no significant results in the median survival time related with hormonal risk factors of breast cancer. The shortest median survival time occurred in HER-2 over-expression (5 months, $P < 0.0001$). Moreover, we classified ER status and HER status into 4 categories (ER+ HER2+, ER+ HER-, ER- HER2+, and ER- HER2-). The patients with ER- HER2+ had the poorest survival ($P < 0.0001$).

Discussion

Both of hormonal and growth factor may influence the survival in younger age breast cancer, but it seems that growth factor more dominant to influence breast cancer survival instead hormonal factor in Indonesia population. Thus, further research should be conducted for reassuring this early hypothesis.

P-1-68

EPIDEMIOLOGICAL CHARACTERISTICS OF CERVICAL CANCER IN TAIWAN: (1) INCIDENCE AND MORTALITY ANALYSES (2) RECURRENCE AND SURVIVAL ASSOCIATED RISK FACTORS

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Background

This study analyzed incidence rates of invasive cervical cancer and carcinoma in situ in Taiwan from 1979-2006.

Methods

It retrieved data from Cancer Registry of Department of Health and analyzed changing trends in incidence of invasive cervical cancer and incidence of carcinoma in situ along with changing patterns of age and histological type. In addition, this study used data according to death certificate to analyze the trend in incidence of mortality and factors associated with mortality. In order the stratified the cases into different stages in order for survival analysis, we acquired data from National Taiwan University Hospital to analyze survival of patients with cervical cancer. Since most patients are at early stage of cervical according at time of diagnosis, we further retrieved individual medical charts of patients operated at National Taiwan University Hospital for further analysis on prognostic factors.

Results

Study shows that the incidence rate of invasive cervical cancer remained relatively decrease. However, incidence of carcinoma in situ increased particular for women at younger age groups and after time of national funded Pap screening initiated in 1995. Mortality decreased in a secular fashion but it still increased for those aged 70 years and over. Further analysis showed that factors associated with survival included staging, histology and age. Shows that factors associate with recurrence include lymph node status (HR 1.78, 95% CI 1.04-3.03), depth of stromal invasion (HR 3.05, 95% CI 1.09-8.48), lymphovascular space invasion (HR 2.10, 95% CI 1.18-3.74), and pretreatment SCC level (HR 1.01, 95% CI 1.00-1.03) .

Discussion

Clinicians should be prudent in selecting patients for the most appropriate treatment and pretreatment SCC-antigen level could provide clues to identification of patient that may require adjuvant radiotherapy.

P-1-69

SURVIVAL BENEFIT FROM ADJUVANT CHEMOTHERAPY IN STAGE II NON-SMALL-CELL LUNG CANCER

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Background

Complete surgical resection is the main therapy option for patients with stage II non small cell lung cancer (NSCLC); however, recurrence is highly occurred after complete resection. Adjuvant chemotherapy after complete surgical resection was examined for its clinical benefit in this study.

Methods

The national wide 2004 - 2006 Taiwan Cancer Registry and the 2004 - 2008 Death Registry were used in this study. Patients diagnosed with stage II NSCLC between Jan. 2004 and Dec. 2006 were included. Survival was analyzed by using the Kaplan Meier method with log-rank test. Cox proportional hazards model was also performed to examine the effect of receiving adjuvant chemotherapy after controlling for gender, histology (adenocarcinoma, squamous cell carcinoma, and others), age (0-49, 50-69, and upper 70) and treatment (surgery only or surgery combined with adjuvant chemotherapy).

Results

Within all 1758 NSCLS patients between 2004 to 2006, 308 stage II NSCLC cases were included in this study (17.5%). 120 cases (40%) received surgical therapy only and 188 cases (60%) received surgery combined with adjuvant chemotherapy. The results show that compare to female cases (n=104, 34%), male cases (n=204) in all age groups and all histology types were with poor survival. And elder patients (upper 70 years old) were with poor survival among the two gender group. Cox proportionalhazards model shows that the hazard ratio for 'received djuvant chemotherapy 'and 'male' are 0.67 (95% CI: 0.46 - 0.99) and 1.79 (95% CI: 1.14 - 2.82), respectively. The hazard ratio for age group '70+' is 2.05 (95% CI: 1.06 - 2.82) which the '0-49' group was treated as reference group.

Discussion

In this study, after controlled for age, gender, and histology, adjuvant chemotherapy was found to have some clinical benefit for stage II NSCLC patients received complete surgical resection. We suggest that specific regiments and their effects as used in adjuvant chemotherapy should be further investigated.

P-1-70

**SURVIVAL STUDY ON NASOPHARYNGEAL CANCER:
A HOSPITAL-BASED STUDY FROM TATA MEMORIAL
HOSPITAL, MUMBAI, INDIA**

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Background

Nasopharyngeal cancer (NPC) is generally a rare malignancy. NPC incidence rates are less than 1 per 100,000 in most populations, except in southern China, where an annual incidence of more than 20 cases per 100,000 is reported. Globally, there are an estimated 80,000 new NPC cases (Globocan, 2002). Higher ASR are observed in Malaysia (11.4) and Singapore (14.6). In India, the Aizawl district in Mizoram state had the highest rates (8.4) while the rates were below 1.0 in all other urban registries. There are very few survival studies on nasopharyngeal cancer reported from India. The present study aims to estimate the survival rates based on age, sex, clinical extent of disease, treatment received, diabetes, hypertension and life-style habits.

Methods

The present study carried out at Tata Memorial Hospital (TMH), Mumbai, India, during 2002-05, diagnosed 377 nasopharyngeal cancer cases; 125 new cases, treated in TMH were considered as eligible for analysis. Five-year survival rates using life-table method are reported.

Results

5-year overall survival rates was 73%. Survival was better for males (78%) and among those aged less than 50 years (78%). Those diagnosed at metastatic stage (26% at 2-years) had the worst prognosis compared to with localized disease (71%). Combinative radiotherapy and chemotherapy (78%) showed better outcome than those treated with only chemotherapy (36%). Diabetic history didn't show any difference in survival rates while those known-hypertensive seemed to have better survival rates (87%). Bidi smokers had a poorer survival (69%) than those who didn't.

Discussion

The study indicates that the prognosis is better for younger patients, with localized disease, non-smokers. Radiotherapy combined with chemotherapy showed the best outcome in terms of survival. In India, A prospective study taking into account the various factors including the risk factors will immensely help in providing better outcome for patients.

P-1-71

**SURVIVAL STUDY ON FEMALE LUNG CANCER:
A HOSPITAL-BASED STUDY FROM TATA MEMORIAL
HOSPITAL, MUMBAI, INDIA**

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Background

There are estimated 0.4 million new lung cancer cases in the world. Female lung cancer rates are very low in India, except in the most of the north-east region like Aizawl, Mizoram state (34.7 per 100,000) where the rates are very high. There are very few survival studies on female lung cancer, which formed as the basis for analyzing the data accrued in the hospital registry. The present study aims to estimate the survival rates based on age, sex, clinical extent of disease, treatment received, diabetes, hypertension & life-style habits.

Methods

The present study carried out at Tata Memorial Hospital (TMH), Mumbai, India, during 2004-05, diagnosed 445 female lung cancer cases; 178 new cases, treated in TMH were considered as eligible for analysis. Five-year survival rates using life-table method are reported.

Results

5-year overall survival rates was 8%. Survival was not different by age group (less than 50 yrs and greater than 50 years). Those with non-localized disease had a 8.3% survival, chemotherapy as combinative therapy (3%) had poorer outcome than those treated with non-chemotherapy. Neither diabetic nor hypertension history showed any difference in survival rates. Smokers had a poorer survival (3%), NSLC had the worst prognosis of 0% survival at 5-years.

Discussion

The study indicates that the prognosis is poorer in general, for those diagnosed at non-localized disease, with NSLC histology, treated with chemotherapy either alone or in combination. A prospective study taking into account the various factors including the risk factors will immensely help in providing better outcome for patients.

P-1-72

THE TREND OF COLORECTAL CANCER AND SURVIVAL: HOSPITAL BASED CANCER REGISTRY FROM 1998 TO 2002 DHARMAIS NATIONAL CANCER CENTER, INDONESIA

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Background

According to WHO, Colorectal cancer is the only cancer suffered by man almost equal to woman 9,5% and 9,3% respectively, fast increases since 1975. It is in the sixth rank of malignancies in Indonesia based on pathological data from 1990 to 1999. In developed countries, the cases increase after 50 year old, while in Indonesia at 40 year old (35%). However, patient life expectancy is highly influenced by stage. Life expectancy of patient in early stage is 5 times higher than patient in late stage. The number of deaths in this case is 655.000 deaths per year.

Methods

A retrospective study of colorectal cancer patients who were diagnosed and treated in Dharmais National Cancer Center from 1998 to 2002.

Results

Colorectal cancer was the sixth rank of all malignancy in both sexes, 5,41% Colorectal cancer cases increase in five years especially occurred in young age under 40 year old from 27,1% to 29,2%.

Generally colorectal cancer patients can survive only in the first two years in all ages, if they survive, their survival is longer and can reach until ten years. This occurs in patient with age 40-60 year old while patient before 40 year old and after 60 year old have less chance to survive.

Discussion

In developed countries like United States, colorectal cancer is the fifth malignancy while in Dharmais Cancer Registry from 1998 to 2002 it was the sixth rank.

Colorectal cancer patient coming to Dharmais National Cancer Center are relatively younger than patients in developed countries 40 year old was 24,5 %, while United States patients under 40 year old only 3%. Mortality of Colorectal cancer in Dharmais National Cancer Center was high. The low of 5 years survival rate in this study has not yet reflected the influences of stage, the management of patients. The study to determine the factors influencing the survival must be explored further.

**THE TREND OF CERVICAL CANCER AND SURVIVAL :
HOSPITAL BASED CANCER REGISTRY FROM 1998 TO 2002
DHARMAIS NATIONAL CANCER CENTER, INDONESIA**

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Background

Based on pathologic cancer data in Indonesia, we know there was an increase of cervical cancer cases per year about 11% to 18% of all malignancy. Cervical cancer was reported as first in rank of all malignancies in Medical Education Center in Indonesia from 1990 to 1999. It was relevant with high number of cervical cancer cases in the world namely in the second rank of all malignancies. About 470.000 new cancer cases were diagnosed in 1990 and increased to 500.000 cases until 1999. In the developing countries, the mortality of cervical cancer cases was in the first rank. The prognosis depends on the stage of cancer. Based on WHO report, the five years survival rate of early stage patients with treatment was 92% while overall five years survival rate was about 72%. As a National Cancer Center, the hospital needs to have the frequency and survival data to evaluate the management of cervical cancer patients.

Methods

This study was conducted retrospectively using hospital medical record data of new cervical cancer cases who were diagnosed and treated in Dharmais National Cancer Center from 1998 to 2002.

Results

Cervical cancer (14.6 up to 18.9%) included in 10 commonest malignancy in women, compete with breast cancer to be the first rank of malignancy.

Cervical cancer cases in Dharmais National Cancer Center in 40 up to 49 year old patients were increased up to 20% from 1998 to 2002 but the highest number of cases was still in 36 up to 55 year old patients.

Overall survival of cervical cancer cases can outlive until 9 years but generally the patients can survive only in the first 3 years.

Relative survival by age group of patients was almost equal from 36 to 55 year old group and more than 55 year old group but the survival in less than 35 year old group was lower than those both groups.

Discussion

In the developed countries like United States, cervical cancer cases is in the eighth of the malignancy, while in Indonesia (based on Dharmais cancer registry) cervical cancer cases were still in the second rank (14.6 to 18.9%). Cervical cancer is in the fifth rank as a cause of cancer mortality in the world but the data of Dharmais cancer registry showed that cervical cancer cases is in the second rank which also showed that the life expectancy of patients was still low especially if it is compared to the developed countries. This condition can be caused by many factors that need more thorough and research.

P-1-74

CONDITIONAL SURVIVAL OF CANCERS IN FRANCE A STUDY FROM SURVIVAL REGISTRIES DATA

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Background

Little information on the excess risk of mortality for patients who survived a period of time after diagnosis is available. The aim of this study was to estimate conditional survival for cancer in France.

Methods

The study was based on data from 205,562 patients cancers registred in the French cancer registries. It included cases diagnosed between 1989 and 1997 in patients over 15 years and less than 75 The cut-off point was the first of January 2002. Relative survival was estimated using an excess rate model the observed mortality rate was split up into two mortality rates, the expected mortality rate (i.e. the natural mortality rate) and the excess mortality rate (i.e. mortality rate due to cancer). The annual probability of death from cancer, conditionally on having survived until there was calculated with the estimates of the excess mortality rate.

Results

After the first year and until the 10th year after diagnosis, probabilities of dying the next year dropped dramatically for colorectal cancer in both genders and all age groups to be less than 2% during the 10th year. For breast and prostate cancers, probabilities did not vary thoroughly over time for all age groups. Probability of dying after the 5th year and until the 10th was some higher for men aged less than 55 (18.1%) for prostate, and for women less than 44 (12.6%) for breast cancer than for older patients. Probability of death after lung cancer was lower for women than for men, concerning each age group and reaching 5.7% during the 10th year.

Discussion

Age did not influence the long term conditional survival in the same way for all cancer sites. Further studies are needed to understand the nature of the observed differences in relative survival within European countries when analysed through conditional survival.

P-1-75

CHANGES IN THE RISK OF DEATH FROM CANCER UP TO FIVE YEARS AFTER DIAGNOSIS IN ELDERLY PATIENTS: A STUDY FROM SURVIVAL REGISTRIES DATA

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Background

Survival among elderly is lower than in younger patients we tried to understand which mechanisms could explain these differences.

Methods

The analyzed dataset belonged to the joint French Cancer Registry database (FRANCIM). Cancers diagnosed between 1989 and 1997. The cut-off point was the first of January 2002. The usual threshold of 75 years at diagnosis was used to define very old patients. Only cancers diagnosed in patients over 15 were analyzed. The impact of age at diagnosis, illustrated by the changes in hazard ratio according to the time elapsed since diagnosis at different ages, with 75 years as reference age. Relative survival is used to estimate net survival rates that is, survivals that would be observed in the absence of non-cancer-related deaths. A relative survival is based on an estimate of the excess mortality hazard directly or indirectly attributable to cancer. The hazard ratio, defined as the mortality hazard of a given group divided by the corresponding hazard of a reference group, was also used. The analysis of the effect of age at diagnosis was based on 0-to 5-year follow-up data and used the nonlinear and nonproportional model.

Results

Cancer mortality in elderly people is described to highlight the mechanisms that could potentially explain observed differences with other age groups. Relative survival, excess mortality hazard, and hazard ratio of mortality were estimated to describe patient outcome according to age. An excess mortality rate was found in patients aged over 75 at the time of diagnosis. This excess mortality rate was mainly seen during the first months after diagnosis, then it decreased gradually with time.

Discussion

An initial phenomenon of patient selection, a greater disease severity at the time of diagnosis, and less-effective treatments given to elderly patients are the most plausible explanations for the increased risk of cancer-related death in the eldest patients.

MARKOV MODEL ANALYSIS ON THE PROGNOSIS OF CANCER PATIENTS IN NAGASAKI, JAPAN

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Background

Recently, proportion of the patients with good prognosis is noticed and "cure rate" or "probability of complete remission" are discussed.

In this study, we investigated probability of complete remission using with Markov model and studied its change by time period.

Methods

Two types of Markov model were presented; a three-state Markov model [CTD-model] consisted of "complete remission", "temporary remission", and "death" and a two-state one [AD-model] consisted of "alive", and "death". The sum of the probability for "complete remission" and that of "temporary remission" in CTD model was assumed to be equal to the probability for "alive" in AD-model. Fitting these models to calculated survival rate, the probability of "complete remission" was investigated.

We covered cases those were diagnosed as lung, stomach, colon, liver and breast and registered in Nagasaki Cancer Registry between 1985 and 1997. It was excluded that registered cases with DCO, not primary cancer, in situ cancer. In the result, we covered 72,223 cases.

The period from 1985 to 1991 was defined as preceding period [Pp], and the period from 1992 to 1997 into as later period [Lp]. The survival rate was calculated by site of cancer in each term, using Kaplan-Meier method. We also computed the survival rate by stages; all stage [All], localized [Local], spread to adjacent tissue and regional lymph node [Regional], metastasis [Meta].

Results

Regardless of period, site, and stage, the CTD-model showed a better fit than AD-model. Only in [Local] of stomach and breast, transient probability from "temporary remission" to "complete remission" was 0.0, namely, the AD-model was selected.

In CTD-model of liver and lung cancer, the transient probability from "temporary remission" to "death" in [Pp] was higher than that in [Lp]. On the other hand, the probability rose in stomach cancer.

Discussion

The application of Markov model for the prognosis of cancer patients has been reported in a few study, however, our study would present a new point of view for the Markov analysis. The goodness of fit for the three-state model suggested the presence of the probability for the "complete remission" in the almost site and stage.

Transient probability from "temporary remission" to "death" was seemed to be influenced by difference of age distribution between [Pp] and [Lp]. It would be needed further investigation for the influence of the change of the age-distribution.

P-1-77

**AN INTERNATIONAL COMPARISON OF BREAST,
COLORECTAL, LUNG AND OVARIAN CANCER SURVIVAL AND
UNDERLYING CAUSES BETWEEN 12 JURISDICTIONS**

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Background

The EURO CARE and CONCORD studies have indicated significant international differences in cancer survival during the 1990s. Module 1 of the International Cancer Benchmarking Partnership (ICBP) aims to update these cancer survival comparisons for colorectal, breast, lung and ovarian cancers and to explore their underlying causes. It will focus on 12 jurisdictions with high-quality, comprehensive population-based cancer registration in Australia, Canada, Denmark, Norway, Sweden and the UK.

Methods

Relative survival at 1 and 5 years and conditional 5-year survival will be estimated for patients diagnosed during 2000-2007 and followed up until the end of 2007, with tight control for background mortality using life tables by calendar year. Survival estimates will be age-standardised using International Cancer Survival Standard weights. The impact on survival differences of stage at diagnosis and access to treatment by surgery, radiotherapy and chemotherapy will be modelled.

Results

Data submission and quality control are in progress, using cancer registries and clinical and other databases. Survival comparisons and analysis of the impact of stage and treatment on international differences will be available.

Discussion

The objective of this project is to inform national or regional priorities for cancer policy and care, by elucidating the comparative importance of early diagnosis and treatment in improving cancer survival. Subsequent modules of the project will address the impact of public awareness of cancer symptoms, primary care approaches to diagnosis of cancer and high-resolution studies of treatment.

P-1-78

CHILDHOOD CANCER IN SOUTHERN PORTUGAL: A 5 YEAR STUDY OF INCIDENCE AND SURVIVAL

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Background

Cancer in children is relatively uncommon. In Portugal less than 1% of total cancer cases occur in children ages 0-14 years, accounting for 8% of the deaths in this age group.

Methods

In a period of 5 years (1998-2002), the South Regional Cancer Registry (ROR-Sul) confirmed 619 newly diagnosed malignant neoplasms in children younger than 15 years. Cases were classified according to the International Classification of Childhood Cancer (ICCC 3) which allocates diseases into 12 major diagnostic groups, based in the morphologic characteristics. Relative survival was used.

Results

Leukemias were the most common type of childhood cancer diagnosed, representing 27% of cases. Nearly 75% of these were acute lymphoblastic leukemia (ALL). The second and third most common diagnoses were CNS tumours (22%) and lymphomas (16%). Regarding the CNS tumours, astrocytomas represented more than half of the total cases. Hodgkin's was the most common form of lymphoma (38% of all cases in this group). Burkitt's and Burkitt-like lymphomas were very frequent in our population, accounting for 43% of all lymphomas in boys. Survival rates for leukemias, CNS tumours and lymphomas were about the same as in other european countries or regions.

Discussion

Survival rates for the three more frequent groups - leukemias, CNS tumours and lymphomas - were comparable to other european results. Burkitt's and Burkitt-like lymphomas had an unusually high incidence for an european region (8/106, probably due to african migrants).

P-2-01

Withdrawal

P-2-02

STUDY OF HOSPITAL BASED NATIONAL CANCER REGISTRY 2006 DATA FROM 7 MAJOR HOSPITALS IN NEPAL

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Background

Cancer registration is the process of collecting data related to cancer cases. The hospital based cancer registry provides importance information related to efficacy of hospital practices in the management of cancer patients. This records information related to demography, diagnosis, treatment pattern and its result to produce a statistics. The hospital based cancer registry helped the institutes to know the magnitude of the cancer problem and exact status with reference to patients characteristics and management. Cancer registration process was started from 1996 in Capital of Nepal Kathmandu but the registration process with 7 hospitals was started from 2003.

List of hospitals enrolled in National cancer registry 2006

- 1.BPKM Cancer hospital, (BPKMCH) Bharatpur, Chitwan
- 2.TU Teaching hospital, (TUTH) Kathmandu
- 3.Bir hospital, Kathmandu
- 4.Kanti Children hospital, Kathmandu
- 5.Bhaktapur Cancer hospital, Kathmandu
- 6.BPK Institute of health science, (BPKIHS) Dharan
- 7.Manipal Teaching hospital, Pokhara

All the activities were coordinated by Department of Cancer Prevention, Control & Research of BPKM Cancer hospital, Bharatpur, Chitwan.

Methods

All the staffs involved in data abstraction process were trained at BPKM Cancer hospital, Bharatpur, Chitwan. The information related to cancer patients was collected from the medical records of participating hospitals. It was done by medical record officers and assistants on prescribed proforma (National cancer registry form) with specified guidelines by active data collection methods. Supervision and monitoring was done periodically by BPKMCH. The filled of forms were collected from different reporting hospitals at BPKMCH. Computer entry was done using Epi info software. The data base was verified for double entry by Name, Age, Sex, Address and Topography. Topography and Morphology coding was done using 3rd edition of ICD -O and ICD 10.

The inclusion criteria of cancer cases were -

- a)Diagnosed and treated cancer cases at one of the collaborating hospitals.
- b)Dignosed as cancer at one of the collaborating hospitals but the treatment taken elsewhere.
- c)Diagnosed and treatment taken elsewhere but patients admitted only for supportive care in collaborating hospitals.

Results

The total number of new cancer cases registered in 3006 from different hospitls was 5041. Among them 133 (2.6%) Indian cancer cases were excluded and 4,908 cases were remained for analysis.

Findings No-1

Hospitals Name	No.	Top Ten Cancer (Both Sex)
1.BPKM Cancer hospital	- 2564 (52.2%)	1.Ca. Lungs - 679 (13.8%)
2.Bhaktapur Cancer hospital	- 1086 (22.1%)	2.Ca.Cervix Uterie - 555 (11.3%)
3.BPKIHealth Science	- 613 (12.5.%)	3.Ca.Breast - 432 (8.8%)
4.Birhospital	- 350 (7.1%)	4.Ca.Stomach - 296 (6.0%)
5.Manipal Teaching hospital	- 172 (3.5%)	5.Leukemia - 268 (5.5%)
6.TU Teaching hospital	- 89 (1.8%)	6.Lymphoma - 208 (4.2%)
7.Kanti Children Hospital	- 34 (0.7%)	7.Unknown primary site - 202 (4.1)
		8.Ca.Gall bladder - 183 (3.7%)
		9.Ca.Ovary - 175 (3.6%)
		10.Ca.Larynx - 161 (3.3%)

Discussion

This study was including only seven major hospitals of the country so the coverage may not represent the whole country. It could be said that, at present this only reflect the disease burden of the collaborating hospitals. The mortality data could not possible on the basis of hospital based records.

The cancer cases registered by collaborating hospitals are based on medical records files, report of histopathology and radiology. Similarly the patients diagnosis out side the collaborating hospitals and not admitted for treatment may be missed.

P-2-03

SOCIAL INEQUALITIES IN CANCER IN INDIA

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Background

Socio-economic differences in the frequency of cancer may be attributable to difference in life circumstance from different sections of the society. Societies are not homogeneous and variations between people of different social classes and their multiple aspects of life style, culture, religion and behavior have clear repercussion on health.

Methods

In cancer incidence and mortality, majors have used that are constructed on the basis of occupation, education, income and wealth or area of residence. Various studies carried out on these aspects in India have been summarized in short.

Results

Mumbai cancer Registry data indicates that for breast cancer incidence there is an increasing trend in incidence with increasing educational levels. In contrast incidence of cervix and mouth cancers are inversely related to educational levels. In Bangalore it has been show that women with a higher income and residing in urban areas have found at higher risk of breast cancer. In Mumbai population Parsis appears to be much higher risk than those professing other religion. A significant reduction in occupational cancers attributable to implementations for preventive measure has been demonstrated in many instances. Poverty and lack of education together lead to lack of empowerment forming a vicious cycle which leads to delay in diagnosis, inability to access the health care facility, to complete the treatment and to have adequate follow-up. Programmes directed towards elimination of poverty, illiteracy and restoring social equality have yielded desirable results of prev ention and early detection of cancer.

Discussion

There are certain cancers that are more common in lower socio-economic classes. The treatment outcome, like survival, is related to the social class, as patients belonging to higher classes have better survival rates probably due to better access to the health care facilities and their ability to complete the treatment. The inequality between social classes can increase or decrease over depending upon the dynamic change in the society.

P-2-04

RELATIONSHIP BETWEEN POPULATION BASED AND HOSPITAL BASED CANCER REGISTRY DATA IN INDIA - AN EXPLORATORY ANALYSIS

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Background

One of the objectives of Hospital Based Cancer Registry (HBCR) is to contribute information on cancer patients to respective Population Based Cancer Registry (PBCR). The present paper explores the relationship between the data of PBCRs and HBCRs, where ever they are functioning together in the same area, in India.

Methods

The cancer data generated by the HBCRs and PBCRs at Bangalore, Chennai and Mumbai, functioning under the network of National Cancer Registry Programme (ICMR), Bangalore, India, for the periods 1982-84 and 2004-05, was considered for the present analysis and compared. Based on the addresses of the patients in HBCR data, the resident cancer patients were identified. Their leading sites with the percentage contributions and respective ranks were compared with those of PBCR data.

Results

The pooled number of cases covered during the period 1982-84 and 2004-05 for the HBCRs of Bangalore, Chennai and Mumbai were 67,243 and 67,210 respectively. The corresponding number of cases covered for PBCRs were 30,625 and 39,443. The resident cases covered for above two periods constituted about 21% and 18% of the total HBCR cases and about 46% and 31% of the PBCR cases. In males, for the period 2004-05, the set of first five leading sites seen in PBCR data remained same with variation in their ranks in Chennai HBCR data while in case of Bangalore and Mumbai HBCR data, only three sites each were found to be common with that of PBCR data. In case of females, four out of first five sites remained same in all the three registries. For the leading sites, the percentage contribution to total, varied by Hospital and Population based registries.

Discussion

From 1984-86 to 2004-05, the contribution of HBCR to PBCR cancer cases has decreased from 46% to 31%. Accordingly, the agreement in the ranks of their leading sites has also shown a decline. The data of HBCR will still be useful in defining at least first five leading sites of cancer in the communities.

P-2-05

VARIATION IN LYMPH NODE EVALUATION IN RECTAL CANCER, A DUTCH NATIONWIDE POPULATION-BASED STUDY

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Background

For adequate staging and subsequent accurate estimation of prognosis, a sufficient number of lymph nodes has to be evaluated. Aims of this study were to identify factors associated with adequate nodal evaluation and to determine its relationship with survival.

Methods

Data from all patients with rectal carcinoma stage I-III who underwent surgical treatment, diagnosed in the period 2000-2006 were retrieved from the Netherlands Cancer Registry. Multilevel logistic analysis was performed to examine the influence of relevant factors on the number of evaluated lymph nodes. Kaplan-Meier and Cox regression analysis were used to analyse the association with overall survival.

Results

The number of evaluated lymph nodes was determined for 10,788 (91%) of 11,818 tumours. Median number of evaluated lymph nodes was 7, ranging from 4 to 11 between pathology laboratories. The proportion of patients with positive lymph nodes increased with increasing number of evaluated lymph nodes. Males, younger patients, tumours with deeper invasion and nodal involvement, patients without preoperative radiotherapy who underwent a low anterior resection and whose lymph nodes were evaluated in an academic pathology laboratory were more likely to have 10 or more lymph nodes evaluated. After adding these factors to the model, unexplained variation between pathology laboratories and hospitals remained. The risk of death decreased with increasing number of evaluated lymph nodes.

Discussion

Large variation in lymph node evaluation among patients with rectal cancer was revealed. Improvement in lymph node evaluation by both hospitals and pathology laboratories could improve staging, leading to more reliable estimation of prognosis.

P-2-06

IMPLEMENTATION OF TRASTUZUMAB IN ADJUVANT TREATMENT OF BREAST CANCER AND GUIDELINE ADHERENCE IN THE NETHERLANDS

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Background

Trastuzumab combined with adjuvant chemotherapy markedly improves outcome in women with newly diagnosed HER2-positive breast cancer. It is assumed that about 15% of the women with stage I-III breast cancer do have HER2-positive disease. Many of these women will be advised to undergo adjuvant chemotherapy in combination with trastuzumab because of poor-risk prognostic factors; tumor size or nodal status (Dutch-guideline September 15th 2005). Since this date HER2-overexpression and treatment were recorded in the Netherlands Cancer Registry (NCR) on a regular basis. Aim of this study is to evaluate the implementation of adjuvant trastuzumab in clinical practice, i.e., guideline compliance and regional differences within the Netherlands.

Methods

Women diagnosed with breast cancer between September 2005 and January 2007 were selected from the NCR. Women with metastases at time of diagnosis or received neoadjuvant chemotherapy were excluded. For HER2-positive patients with adjuvant chemotherapy but not trastuzumab the reason was recovered from the patient files.

Results

Of the 14,934 selected breast cancer patients stage I-III, 1,928 (12.9%) women had a HER2-positive tumour. HER2-overexpression decreased with age from 22.3% in women <40 years to 9.2% in women >70 years. Of all HER2-positive women with adjuvant chemotherapy, 9.9% in 2005 and 3.6% in 2007 did not receive trastuzumab. This was 66 patient over the total period (5.9%), ranging ranged from 3.2% to 15.6% between various regions. A legitimate reason (i.e. weak heart muscles) for not receiving trastuzumab was found in 42 patients (64%).

Discussion

The population based NCR was of great value to evaluate the implementation of adjuvant trastuzumab since introduction. The percentage of women with HER2-positive breast cancer was markedly related to age. In the Netherlands the implementation of trastuzumab in clinical practice was rapid (94% actually received trastuzumab), and nearly complete after 1-2 years since introduction, although there were still regional variations.

P-2-07

PERCENTAGE LOCAL RECURRENCES IN THE NETHERLANDS: A PERFORMANCE INDICATOR?

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Background

To describe the percentage local recurrences within 5 years after surgery (with or without radiotherapy) for primary invasive breast cancer in Dutch hospitals. This percentage is a performance indicator in the Health Care Transparency Programme initiated by the Dutch Health Care Inspectorate.

Methods

All women diagnosed in 2003 with a primary invasive breast cancer for which they underwent surgical treatment, were selected from the Netherlands Cancer Registry (NCR). NCR registration clerks collected additional information on recurrences within 5 years after initial diagnosis. The percentages of local recurrences are presented anonymously by hospital in 'forest'-plots and 'funnel'-plots.

Results

In total 9898 women diagnosed in 2003 with primary breast cancer were treated in one of the 99 Dutch hospitals. Within 5 years 266 local recurrences occurred. The 5-year percentage of local recurrences is 3,03% (95%CI: 2,69% to 3,41%), which is well below the accepted standard of 5%. After breast conserving surgery the 5-year percentage of local recurrence is 2,63% (95%BI: 2,21% to 3,12%), and after mastectomy 3,50% (95%BI: 2,97% to 4,13%). Stratification by hospital shows large variation in recurrence rates (0% - 17%). However, the number of patients treated in most hospitals is too small to provide reliable estimates.

Discussion

The percentage of local recurrences within 5 years after diagnosis in The Netherlands is lower than the accepted standard of 5%. Conclusions on possible differences in quality of care between hospitals cannot be drawn based on these data, due to the low average recurrence rate and the small number of cases per hospital.

P-2-08

ACTIONABLE INDICATORS FOR SHORT AND LONG TERM OUTCOMES IN RECTAL CANCER

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Background

Although patient and tumor characteristics are the most important determinants for outcomes in rectal cancer care, actionable factors for improving these are still unclear. We assess the impact of surgeon and hospital factors which can actually be influenced to improve on postoperative complications, disease free (DFS) and relative survival (RS) in rectal cancer.

Methods

Data of 819 curatively operated rectal cancer patients, staged I-III and diagnosed between 2001 and 2005, were derived from the population-based Cancer Registry of the Comprehensive Cancer Centre North East and medical record information. We performed logistic regression analysis was performed to examine the influence of relevant factors on postoperative complications and time from diagnosis to first treatment and Cox regression analysis for DFS and RS analysis.

Results

Postoperative complications were dependent on type of surgery ($p=0.024$) and hospital volume ($p=0.029$).

Time to treatment was significantly related to DFS (Kaplan Meier shown in figure 1). Multivariate analysis showed that DFS was mainly influenced by stage ($p<0.001$) and time to treatment ($p=0.018$).

Time to treatment was also a prognostic factor for RS (univariate analysis shown in figure 2). Multivariate analysis showed that actionable indicators related to RS were type of surgery ($p=0.011$) and time to treatment ($p=0.048$).

Time to treatment was found to be related to co-morbidity ($p=0.007$), preoperative radiotherapy ($p=0.003$) and referral for operation ($p=0.048$) (table1). Nevertheless, 18.2% unexplained variation in time to treatment remained on hospital level.

Discussion

Optimal outcomes for rectal cancer care can be achieved by focusing on early detection and timely diagnosis, as well as adequate choice and timeliness of treatment in hospitals with optimal logistics for rectal cancer patients.

P-2-09

Withdrawal

P-2-10

SOCIAL INEQUALITIES IN NON-SMALL CELL LUNG CANCER MANAGEMENT AND SURVIVAL - A POPULATION-BASED STUDY IN CENTRAL SWEDEN

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Background

To examine possible associations between socioeconomic status, management and survival of patients with non-small cell lung cancer (NSCLC).

Methods

In a population-based cohort study, information was retrieved from the Regional Lung Cancer Register in central Sweden, the Cause of Death Register and a Social Database. Odds ratios (OR) and hazard ratios (HR) were compared to assess associations between educational level and management and survival.

Results

A total of 3,370 eligible patients with a NSCLC diagnosis between 1996 and 2004 were identified. There were no differences in stage at diagnosis between educational groups. A higher diagnostic intensity was observed in patients with high compared to low education. There were also social gradients in time between referral and diagnosis in early stage disease (median time low: 32, high: 17 days). Social differences in treatment remained following adjustment for prognostic factors (surgery in early stage disease, high vs. low OR 95% 2.84; CI 1.40-5.79). Following adjustment for prognostic factors and treatment, the risk of death in early stage disease was lower in women with high education (high vs. low HR 0.33; CI 95% 0.14 - 0.77).

Discussion

Our results indicate that disadvantaged groups with NSCLC receive less intensive care. Low education remained an independent predictor of poor survival only in women with early stage disease. The origin of these social inequalities are unknown, but may be explained by social differences in access to care, comorbidity and life-style factors.

P-2-11

USE OF HORMONE REPLACEMENT THERAPY IN A COHORT OF WOMEN UNDER BREAST SCREENING PROGRAMME IN TURIN, ITALY

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Background

The decline of breast cancer (BC) incidence in US was put in relation with the quitting of Hormone Replacement Therapy (HRT). Other studies stressed the role of changing patterns of mammography. In Turin, Italy, where a population-based screening programme started in 1992, we found a similar decrease. With the availability of individually-based information on drug prescriptions, we investigated prevalence of HRT use, screening history and BC in a cohort of women.

Methods

We selected a cohort of women, aged 45-60, invited in 2000-05 to their first mammography. The cohort was linked with data on prescription drugs. Only oestrogens or oestrogens-progestins compounds were retained (no contraception). The cohort was followed-up to the end of 2005 for occurrence of a BC.

Results

A total of 93,239 women received an invitation to screening, and 63,518 (68%) actually had it. During the observation period, 27,567 (30%) women had at least one prescription. HRT has been more frequent between 2000 and 2002, while it decreased in the following years, more rapidly in the screening-attendant group. In the cohort, 1,369 invasive and 293 in-situ BC occurred. Incidence rate of invasive BC exhibited a decrease between 2001 and 2003, while it slightly increased afterwards in years 2004 and 2005. The risk of developing a BC associated to HRT increased for 1-2 years users, in comparison to non users (RR = 1.27 95%CL 1.02, 1.59). Stratifying for screening compliance, the risk of a BC was significantly above unity for HRT users (RR: 1.72 in sporadic users; 2.48 in longer users) among those who did not attend the screening rounds, while it was not different from unity in those who attended the screening. Among invasive cases, HRT was associated ($p=0.045$) with positive oestrogens receptors status.

Discussion

Our results showed that an effect on rates of the changing patterns of HRT use can as well be present, although at a limited extend, due to the relatively low prevalence of HRT in our population.

P-2-12

DIFFERENCE OF STAGE AT CANCER DIAGNOSIS BY ECONOMICAL STATUS IN GWANGJU-JEONNAM, SOUTH KOREA

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Background

The aim of this study is to evaluate whether stage at cancer diagnosis was differed according to the economical status of patients.

Methods

We used data from Gwangju-Jeonnam Cancer Registry, a population-based cancer registry in South Korea established in 1997. A total of 13,741 incident stomach, colorectal, breast, and cervical cancer cases diagnosed in 2005-2007 were registered and of whom 10,961 cases (79.8%) were available the essential variables such as SEER stage and social economical status (SES). We classified the study cases into 4 groups by their amount of health insurance bill at each year and cancer stage at diagnosis was grouped as local and non-local at each sites. Logistic regression analysis was used to analyzed the risk of non-local stage using the SES, age, sex and residential area (city or rural) as covariates.

Results

We observed overall differences of the distribution of SEER stage according to the SES gradient in breast and cervical cancer, not in stomach and colorectal cancer. The lowest SES group were at greater risk of non-local stage at cancer diagnosis compared with the highest SES group. The estimated ORs were 1.23 (95% CI, 1.05-1.45), 1.32 (95% CI, 1.06-1.64), 1.53 (95% CI, 1.14-2.05), and 1.74 (95% CI, 1.14-2.67) in stomach cancer, colorectal cancer, breast cancer, and cervical cancer, respectively. We found an overall difference the proportion of early stage at diagnosis according to SES gradient and significant higher risk of advanced stage at diagnosis in lowest SES group.

Discussion

These results suggest that socio-economical disparities still presented in cancer diagnosis despite of many national supporting programs to low SES population such as organized cancer screening program and financial supports.

P-2-13

Withdrawal

P-2-14

CANCER REGISTRATION DATA & QUALITY INDICATORS OF MUMBAI CANCER REGISTRY DURING 1982-2006

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Background

Cancer is not a notifiable disease in India, and hence registration has to be active. Cancer registration data plays a major role in the design and monitoring of cancer control activities and policies, and population-based cancer registries (PBCR) are the main source of information. Mumbai Cancer Registry (MCR) was established with aim to have reliable data on cancer from precisely defined urban population of Greater Mumbai.

Methods

The MCR covers an area of 603.0 sq.kms. Mortality statistics are obtained from the Department of Vital Statistics, death registers in hospitals and by active follow-up of registered cases. The Mumbai Cancer Registry today covers more than 200 hospitals and private nursing homes in the metropolitan area. A total of 198,611 (102,195 males, 96,416 females) cases were registered during 1982 - 2006.

Results

The average annual world-standardized age-adjusted rates (AAR) per 100,000 are 107.3 in males and 108.5 in females. One of the most important parameters in the assessment of cancer registry data quality is the percentage of Microscopic Verified (M.V.) cases. Out of total registered cases, M.V proved cases are (78.8%) and D.C.O proved cases are (7%). Lung (AAR:10.9) is the leading site of malignancy among males, followed by cancers of the oesophagus (AAR:7.7) and Mouth (AAR:5.9). Among females, cancer of the Breast (AAR:26.4) is the commonest, followed by cervix (AAR:15.8) and ovarian cancers (AAR:6.8). The life-time cumulative risk (00-74 years) of cancer in Mumbai population is on an average 1 out of 9 males and 1 out of 8 in females.

Discussion

MCR makes every possible effort to maintain a good collaboration from all reporting sources for achieving quality data. Data is reliable and complete.

P-2-15

A STUDY OF CENTRAL NERVOUS SYSTEM TUMORS BY HISTOLOGICAL TYPE IN THE HIROSHIMA PREFECTURE TUMOR REGISTRY

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Background

Histopathological reports of patients with malignant/benign tumors have been collected in the population-based tumor registry system of Hiroshima prefecture, with which around 60 medical facilities are cooperating. The current state of central nervous system tumors was investigated by histological types.

Methods

The data of the registry were coded using the ICD-O-3, and we analyzed the data on tumors that originated from central nervous system. Distribution of gender, age, location, and time-trend of the tumors were evaluated in specific histological types.

Results

The total number of incidence of central nervous system tumors between 1973 and 2004 was 5,262 (2,264 males and 2,998 females). Those included 3,377 benign (1,210 males and 2,167 females) and 1,584 malignant (903 males and 681 females) cases, and properties of another 301 cases (151 males and 150 females) were unclear. Benign tumor cases showed a unimodal distribution of age with a peak in the 50s in both genders while malignant cases showed a bimodal distribution with peaks in the 60s and 9 years of age or younger. The most dominant histological type was meningeal tumor with 1,696 cases (442 males and 1,254 females, 32.2%, including cases with unknown properties and malignant cases) followed by glioma in the broad definition with 1,306 cases (747 males and 559 females, 24.8%), Schwann's sheath tumor with 811 cases (393 males and 418 females, 15.4%, including malignant cases), pituitary tumor with 770 cases (311 males and 459 females, 14.6%, including malignant cases), and malignant lymphoma (including extramedullary plasmacytoma) with 117 cases (62 males and 55 females, 2.2%).

Discussion

The distribution of gender, age, location, and the time-trend were clarified for the central nervous system tumors in Hiroshima prefecture based on the population-based tumor registry data.

P-2-16

RECENT SENSITIVITY AND SPECIFICITY OF POPULATION-BASED SCREENING FOR STOMACH CANCER USING PHOTOFLUOROGRAPHY IN YAMAGATA

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Background

Whereas population-based screening for stomach cancer using photofluorography has been done since 1983 in Japan, expert readers in interpretation of stomach photofluograms might have decreased in parallel with increased use of upper gastrointestinal endoscopy. This shift of modality may influence quality of the stomach cancer screening; however, a little is known about it. A purpose of this study is to evaluate the quality of population-based screening for stomach cancer using population-based cancer registry data.

Methods

We estimated sensitivity, specificity and positive predictive value (PPV) and their 95% confidence intervals (CI) through record linkage between files from the population-based screening program conducted by 19 municipalities in Yamagata Prefecture in fiscal year 2003 which consisted of 70,336 residents screened and Yamagata prefectural cancer registry. We defined false negative cases as those were negative in screening and registered as having stomach cancer in the registry within 12 months after screening.

Results

The number of detected cancers, false-negative cases and the sensitivity were 169, 62 and 73.2% (CI: 67.0 to 78.8), respectively. The specificity and the PPV were 88.5% (CI: 88.2 to 88.7) and 2.05% (CI: 1.75 to 2.37), respectively.

Discussion

The results showed that the recent sensitivity and specificity of population-based screening for stomach cancer using photofluorography were not different significantly compared with those of reported in 1990's. Cancer data via the population-based registry plays a practical role in quality assurance of cancer screening.

P-2-17

OCCUPATIONAL EXPOSURE TO IRON AND WELDING FUMES AND THE RISK OF LUNG CANCER: A WHOLE-POPULATION-BASED STUDY IN FINLAND

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Background

Exposure to iron fumes and dust and welding fumes is widespread and may increase the risk of lung cancer. The aim of this study was to identify associations between exposure to iron and welding fumes and the incidence of lung cancer among Finnish men.

Methods

The cohort of all economically active Finnish men, born in 1906 - 1945, who participated in the national census in 1970 was followed through the Finnish Cancer Registry for lung cancer cases (N=30 137) during 1971 - 1995. Their census occupations in 1970 were converted to estimates of cumulative exposure to iron and welding fumes with the Finnish job-exposure matrix on the basis of likelihood, average level, and estimated duration of exposure. Relative risk estimates for categorized cumulative exposure were defined by a Poisson regression, adjusted for smoking, socioeconomic status, and exposure to asbestos and silica dust.

Results

The relative risks for lung cancer increased as the cumulative exposure to iron and welding fumes increased. The relative risks in the highest exposure category was 1.35 [95% confidence interval (95% CI) 1.05 - 1.73] for iron and 1.15 (95% CI 0.90 - 1.46) for welding fumes. The respective relative risks estimated for squamous-cell carcinoma of the lungs were 1.94 (95% CI 1.35 - 2.78) and 1.55 (95% CI 1.08 - 2.24). There was no excess risk of small-cell carcinoma in any exposure category.

Discussion

Occupational exposure to iron and welding fumes was associated with an increase in lung cancer risk, mainly that of squamous-cell carcinoma. The simultaneous exposure to both of these agents and other potential work-related carcinogens complicates the interpretation of the independent roles of the risk factors.

P-2-18

OCCUPATIONAL EXPOSURE TO WOOD DUST AND FORMALDEHYDE AND RISK OF NASAL, NASOPHARYNGEAL AND LUNG CANCER AMONG FINNISH MEN

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Background

Wood dust and formaldehyde have been used extensively and proposed as potential carcinogens for occupationally exposed populations. The objective of the study was to assess the risk of nasal, nasopharyngeal and lung cancer in relation to occupational exposure to wood dust and formaldehyde among Finnish men.

Methods

The cohort of all Finnish men born in 1906-1945 and employed in 1970 was followed-up through the Finnish Cancer Registry for incident cases of cancers of the nose (n=292), nasopharynx (n=149), and lung (n=30137) during 1971-1995. Their census occupations in 1970 were converted to exposure estimates to wood dust, formaldehyde, asbestos and silica dust with the Finnish job-exposure matrix. Cumulative exposure (CE) was calculated based on the prevalence, average level and estimated duration of exposure. The relative risk (RR) estimates for CE-categories of wood dust and formaldehyde were defined by Poisson regression, adjusting for exposure to asbestos and to silica dust, smoking, and socio-economic status.

Results

Men exposed to wood dust had a significant excess of nasal cancer overall (RR 1.59, 95% confidence interval 1.06-2.38) and specifically in nasal squamous cell carcinoma (1.98, 1.19-3.31). Workers exposed to formaldehyde had a RR of 1.18 (1.12-1.25) for lung cancer. There was no indication that CE to wood dust or formaldehyde would increase the risk of the nasopharyngeal cancer.

Discussion

Occupational exposure to wood dust in Finland, which is mainly soft wood, appeared to increase the risk of nasal cancer but not that of nasopharyngeal cancer or lung cancer. The slight excess risk of lung cancer seen for formaldehyde may be due residual confounding due to smoking.

P-2-19

SCREENING FOR CERVICAL, UTERINE AND BREAST CANCER IN A POPULATION OF WOMEN 25-60 YEARS IN OUJDA, MOROCCO

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Background

In Morocco, the cancer is a major public health problem. According to data from the Cancer Registry of the Greater Casablanca, the national annual incidence of cancer is estimated to 101.7 new cases per 100,000 inhabitants. This would correspond to 30,500 new cases of cancer each year, the Registry also states, a percentage of 36.12% for breast cancer and another 12.82% for cervical cancer, compared to the total cancers. Similarly, at the East Region, the Regional Center of Oncology Hassan II (Crohas II), indicated a rate of 31.2% damage in breast cancer and 8, 71% damage in cancer of the cervix, in the year 2007. Indeed, even as cancers of the breast and cervix most deadly of women, although they are more easily cured when discovered early and treated.

Methods

This is an epidemiological study conducted in 2008 among women in the prefecture of Oujda. Patients were recruited at health centers in the prefecture of Oujda randomly to better estimate the rate of cervical and breast cancer in a population. A thorough examination was carried out using a questionnaire before the clinical gynecological examination and sampling cell for Pap smear. Any woman with a suspicious Pap smear should be biopsied at the center of reference. If histology confirms the cytology, the patient is addressed at the cancer center of Oujda.

At the center of Reference, physicians, obstetricians and midwives have to gynecological procedures for women and palpation of breasts. Gynecological samples were carried out systematic ways to any unmarried woman not to detect cancer of the cervix. The blades have been mounted, stained and examined on site by a pathologist. The Pap smear (FCV) is achieved using a spatula of Ayre by collecting cells at the exo-endocervical junction. The cells were spread on slides, dried, fixed and stained with the method of Shorr and Harris. The reading is done according to the nomenclature of Bethesda after mounting on a slide. Three to four biopsies generally small, preserved in Bouin's fluid, arrived at the laboratory. After fixation, dehydration and waxing fragments, 4 sections were spread on slides and stained with eosin hialin. Also of ultrasounds and mammograms were performed for women with suspected breast nodules.

Results

Of the screened women, women with breast cancer 9 and the women with cervical cancer are 7 women with cancerous lesions and 6 women with precancerous lesions. We find that 40% of women recruited to the partner are aged between 41 and 50, while women aged under 30 represent only 4%. Note that almost 8% of women recruited, aged over 60 are living with breast cancer, while almost five women whose age is between 41 and 50, are affected by cervical cancer. Most women are illiterate recruits with a rate of presque 15%, however just 3% of them are academics. Of these women, there are 5% of women recruited with cervical cancer have a university degree, while 3% of women with breast cancer are illiterate. 80% of female recruits are destitute among them 4% had breast cancer while only 10% of them are civil servants with 3.5% of women are affected by cervical cancer. 12% of screened women with breast cancer are unmarried, cons by 3% of those with cancer of the cervix are married. We also note that 12% of screened women with cervical cancer have a family history of gynecologic cancer. Almost 70% of women are recruited lactating women. Among the non-lactating women, 9% are women with breast cancer, while 5% of them are women with cervical cancer. Almost 3% of screened women with breast cancer using the pill, while only 8% of women using the injectable contraceptive as are diagnosed with cancer of the cervix.

Discussion

Since the age of majority of screened women was between 41-50 years, adding that almost 40% of them are multiparous, this explains the interest of the parameters age and multiparity as risk factors for attaining the Cancer of the cervix.

Results concerning the age of marriage are close which means the involvement of early sex in achieving cervical cancer 12% of screened women with a cervical cancer have a family history of gynecological cancer where the finding that genetic factors are a major cause of impairment caused by cancer of the cervix.

The majority of screened women with breast cancer are aged over 60 years the majority of whom are single, a result demonstrating the contribution of maternal breastfeeding in the prevention of an attack by breast cancer. The pill is the highest rate where the finding of the involvement of hormonal hormones as a factor promoting the achievement by breast cancer.

P-2-20

CURRENT STATUS OF HOSPITAL-BASED CANCER REGISTRY IN UNIVERSITY HOSPITALS IN JAPAN

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Background

Since university hospitals greatly contribute to the treatment of cancer patients in Japan, the quality of their hospital-based cancer registry is important. However, the current status is largely unknown. The aim of this study is to reveal that and extract the problems to be solved.

Methods

We conducted a questionnaire survey, asking the structure and operation of hospital-based cancer registry in university hospitals in 2009.

Results

Most university hospitals have already launched the hospital-based cancer registry mainly because they were certified as designated cancer care hospitals around 2007 whose cancer registry is mandatory. Insufficient budget and staff were extracted as the problems to be solved. The strategy to obtain prognostic information has not been established yet. Especially, the introduction of referencing residential registration data with cooperation of public health center and local municipalities is a critical issue.

Discussion

University hospitals have conducted hospital-based cancer registry with several problems. They need a sufficient budget, staff, and legal basis for registration.

P-2-21

VALIDATION ANALYSIS OF JAPANESE HISTOLOGICAL CLASSIFICATION OF BREAST CANCER USING THE NATIONAL SUMMARY OF HOSPITAL CANCER REGISTRY, 2007

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Background

Japanese classification of breast cancer (JCBC) has a special subclassification for invasive ductal carcinoma (IDC) without pararell in any other country: papillotubular carcinoma (PT), solid-tubular carcinoma and scirrhus carcinoma (SC). In Japanese hospital cancer registry (HCR), PT is coded as 850031 and SC as 850033.

Method

The national summary of HCR from 356 Local Core Cancer Hospitals (LCCH), 2007, was provided from HCR Section, National Cancer Center, Japan. (PT cases)/(PT and SC cases) at each LCCH (PSR) was 45.6% on average, 21.2% in SD. The PSR of the LCCH that treats the most breast cancers (BC) in Japan was used as the standard (StPSR=42.3%), since JCBC was based on its in-house histological classification. LCCHs were divided into 3 groups: H5 (PSR>StPSR+5%), G5 (good proportion PSR within StPSR \pm 5%) and L5 (PSR<StPSR-5%) or H3 (>+3%), G3 (within 3%) and L3 (<-3%).

Result

G5 and G3 had higher ratio of node-negative cases/node-positive cases in pT2-3 BC (pT23-N(-)/N(+)) of each group than L5 and L3, respectively ($P<0.05$) (χ^2 -test). G5 and H3 had higher average of pT23-N(-)/N(+) at each LCCH than L5 and L3, respectively ($P<0.05$)(Welch's T-test).

Discussion

IDC with a substantial ductal carcinoma in situ (DCIS) is PT according to JCBC even if IDC looks like SC. Some pathologists classify such a lesion as PT, while others classify such PT as "SC with DCIS" *erroneously* in JCBC, or just "IDC with DCIS" in WHO classification. The former will be more at LCCHs of H or G group and the latter at L. The former may overrate pT by measuring whole PT size although pT1-3 of BC is decided by size of IDC. We assume that an overrated pT2-3 BC has a lower risk of metastasis than true one. In fact, the BCs recorded as pT2-3 at LCCHs of H and G group had a lower risk of nodal metastasis than those with L group, indicating that JCBC affected the accuracy of pTNM in Japan. The national summary of HCR can be a useful tool to elucidate national problems on cancer therapy.

A SPATIAL ANALYSIS OF HOSPITALIZATION RATES FOR STOMACH CANCER IN ZARAGOZA

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Background

Spatial analysis of variability in cancer hospitalization rates would point out to differences in incidence, access to health care or variability in medical practice management. This study examines geographic variation in hospitalization rates for gastric cancer among patients residing in Zaragoza during the period 2005-2008 and their association with deprivation index.

Methods

Patients with stomach cancer residing in Zaragoza were extracted from the Hospital Discharge Register for the period 2005-2008. Census tract (CT) was used as the basic geographical area. Standardized Hospital Morbidity Ratio (SHMR) was obtained for each CT using the Zaragoza rates as standard. SHMR were smoothed by means of the Besag, York y Mollie (BYM) model. To study the relation between socioeconomic situation and cancer a synthetic deprivation index and rural index previously used (1,2) were introduced in the BYM model as discrete variable (quartiles). Analyses were made for male and female separately.

Results

A total of 843 patients were identified during the study period. Differences in spatial patterns have been found between male and female in Zaragoza, being the geographical variability higher among the most rural CT than in urban areas in male and female. Variations in smoothed SHMR among CT of the main city of Zaragoza in male could be explained, at least partially, by differences in the deprivation index, being the relative risk (RR) 1.50 (95% CI: 1.06, 2.06) for Q4 (CT with the highest deprivation index) compared with Q1 (CT with the lowest deprived index). The RR in male was 0.86 in Q4 (CT with the lowest rural index) compared with Q1 (reference quartile, including CT with the highest rural index) but this difference is not statistically significant (95% CI: 0.38, 1.59).

Discussion

The spatial analysis of hospitalization for gastric cancer show differences in geographical patterns, between male and female, and among the rural areas. Geographical variations only could be explained in men among the CT in the city of Zaragoza for variations in the deprivation index. Further analyses including other indexes and indicators must be carried out in order to explain the variations of hospitalization for gastric cancer.

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P-2-23

IDENTIFYING INCIDENT BREAST CANCER CASES USING THE NATIONAL HEALTH INSURANCE DATABASE IN TAIWAN

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Background

For countries with universal health insurance coverage, claim data is useful in assessing treatment and cost of cancer patients. However, without proofing from cancer surveillance system, incidence cases might not easily be identified within the administrative data. The objective of this study is to evaluate approaches for identifying incident breast cancer cases in the National Health Insurance data, with comparing to the data from cancer registry.

Methods

The 2002-2006 National Health Insurance claim data are used in this study. The 2006 incident breast cancer cases are identified by the 2006 claim data. For those patients have previous outpatient visits or admissions with breast cancer diagnoses, or were reported to Taiwan Cancer Registry as cases diagnosed before 2006, were excluded. The remaining cases were then compared to the 2006 incidence cases derived from cancer registration data. The positive predictive value and sensitivity were calculated by the four different algorithms applied on a whole year's claim data since the patient was diagnosed with breast cancer: (1) at least one visit with breast cancer diagnosis and one related treatment; (2) at least one visit or admission with breast cancer diagnosis; (3) at least two breast cancer diagnoses from visits or admissions; (4) at least three breast cancer diagnoses from visits or admissions. The 95% confidence intervals (95% CI) were estimated using an exact binomial test.

Results

A total of 7693 incident cases of breast cancer diagnosed in 2006 and reported to Taiwan Cancer Registry were used for validation. For the four algorithms, sensitivities are ranged from 88.4% (95%CI: 87.7-89.1) to 93.1% (95%CI: 92.5-93.7).

And the positive predictive values are ranged from 87.8% (95%CI: 87.0-88.5) to 93.6% (95%CI: 93.0-94.1). The algorithm that at least one diagnosis derived from claim data was with the highest sensitivity (93.1%). On the other hand, the algorithm that at least three diagnoses from visits or admissions was with the highest positive predictive value (93.6%).

Discussion

The study result shows that National Health Insurance database is capable to identify incidence breast cancer cases. The result also suggests that at least three diagnoses derived from claim data within a year is the best option for identifying incident cases of the year.

P-2-24

FEMALE BREAST CANCER: VARIATIONS IN CLINICAL PRACTICES IN ZARAGOZA. A POPULATION BASED STUDY

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Background

Standard care should be conservative breast surgery plus radiotherapy for early stage breast cancer, chemotherapy for node-positive cancers, and hormonal treatment for receptor-positive disease. The aim of this study is to identify patterns of care of female breast cancer and the variability of clinical practice.

Methods

A cohort population-based study was carried out. All invasive female breast cancers diagnosed in 2005 among women residing in Zaragoza were obtained from the Zaragoza population-based cancer registry (age, topography and morphology of the tumour). Additional information (stage of the tumour, diagnosis procedures and treatment) was gathered checking the clinical records in hospitals.

Results

A total of 396 cases were registered, being most of them infiltrating ductal carcinoma (80%) and invasive lobular carcinoma (10%). T1N0M0 cases were 23% of the total and 62% of T1N0M0 cases received conservative surgery plus radiotherapy. Chemotherapy was given to 83% of patients with node positive cancers. 25% of women had tumours with positive oestrogen and progesterone receptors and 73% of them received hormonal treatment.

Discussion

There were a low proportion of T1N0M0 cases diagnosed, related with other studies. It could be explained, at least partially, because the population-based screening of female breast cancer started in Zaragoza in 2007. The development of guideline for breast cancer management will improve the care of these patients.

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P-2-25

EVOLUTION OF HOSPITAL BASED CANCER REGISTRY IN PAST TWO DECADES AND BURDENS OF CANCER IN SRI LANKA

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Background

Cancer incidence and trends of Sri Lanka has been monitored by the National Cancer Control Programme as periodic cancer surveillance from 1985-2000 and six publications of the registry was published up to year 2000. The 7th volume of the series with data of 2001-2005 was published in 2009. Year 2006 and 2007 data have been entered into the CANREG4. Mortality data is being collected from 2006.

Methods

Since this is a hospital based registry the incidence data are collected from the six cancer treatment units throughout the Island. Registry staff periodically visits all the cancer institutions to collect data actively. Random cross checking is done regularly to assure the quality of data. Coding for topography and morphology is done using ICD-O since 2000.

Results

The crude incidence rates of all cancers in Sri Lanka has increased from 31.6 to 67.9 per 10⁵ population from 1985 to 2005 respectively. The incidence rates have increased from 31.5 per 10⁵ in 1985 to 73.4 per 10⁵ in 2005 in females and 31.7 per 10⁵ in 1985 to 62.3 per 10⁵ in males.

Breast, oral, esophagus, cervix uteri and colo-rectal were the five commonest overall cancers in 2005. The five commonest cancers in males were oral, lung, esophagus, colo-rectal and lymphoma while breast, cervix uteri, ovary, thyroid, and esophagus were in females.

Discussion

According to the evidence breast, esophagus, thyroid and colo-rectal cancer incidence rates are on the rise. Tobacco related cancers have still remained among commonest cancers. Cervical and oral cancer incidence rates remain static. Crude incidence of female shows much sharper increase than male. The registry has gradually evolved into a more comprehensive surveillance method over the years, which is able to publish reliable detailed statistics from 2001. These publications have remained a main monitoring tool of cancer burden in country. Embarkation to the population based cancer registry is the need of the time.

P-2-26

ASSESSMENT OF LUNG CANCER RISK CAUSED BY POLYCYCLIC AROMATIC HYDROCARBONS EXPOSURE OF PEOPLE LIVING AROUND A CHEMICAL SITE IN TARRAGONA, SPAIN

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Background

Several occupational studies in humans have demonstrated an excess risk of lung cancer by inhalation associated to polycyclic aromatic hydrocarbons (PAHs). In Tarragona (northeast of Spain) there is the first chemical site of the South Europe. This study estimates the lifetime lung cancer risk of PAHs exposure by inhalation in people living close an important chemical site and its contribution to the total lung cancer incidence in this area. For that purpose, it has been used a quantitative risk assessment, which is a powerful tool to estimate risk and to make decisions, and the Cancer Registry, which is the most important tool to know cancer incidence.

Methods

The PAHs have been determined both in the atmospheric gas and particle phases. The monitoring has been done over one year in 3 locations situated next to the industrial site, according to the Directive 2008/50/CE criteria. Samples were collected using a high volume air sample, extracted by pressurized liquid extraction and analyzed by gas chromatography/mass spectrometry. Risk was estimated by applying Toxic equivalence factors to calculate the Benzo(a)pyrene (BaP) equivalents and then the World Health Organization Lung Cancer Unit Risk for BaP ($UR = 8.7 \times 10^{-5}$), assuming a lifetime of 70 years. The attributable fraction of lung cancer cases by PAHs exposure was estimated using the most updated Cancer Registry data of the area.

Results

The average lifetime lung cancer risk of the global study was 1.2×10^{-4} . Taking into account the probability of developing lung cancer before the 70 years old in the studied area, the attributable fraction estimated of this PAHs exposure was the 0.4%.

Discussion

The risk of the area was higher than WHO and USEPA recommendable values but lower than the threshold considered as definite risk. The attributable fraction to PAHs exposure is lower than 1%. In depth, studies will be carried out using geocoded cancer data.

P-2-27

PATTERN OF CARE AND SURVIVAL STUDIES: HEAD & NECK, BREAST AND CERVICAL CANCER CONDUCTED AT TATA MEMORIAL HOSPITAL, MUMBAI, INDIA

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Background

We know that breast cancer in western countries and cervical cancer in developing countries are very high. In India head and neck cancer (HN), besides breast (BR) and cervix (CX) cancer, contributes a major proportion to national burden of cancer. In urban registries in India, breast rates are above 25 per 100,000 while the cervix cancer rates are similarly higher in the rural areas, while head & neck cancer rate are high in all registries. There are several individual institution-based studies on pattern of care for these cancer sites reported from India. The National Cancer Registry Programme (NCRP), ICMR, India, initiated a multicentric study, which includes several hospital-registries and hospitals across India.

Methods

The main aim of the project was to determine the pattern of disease with regard to age, stage of disease, treatment, complications of treatment, follow-up etc and to generate a national database for improving the patient care. TMH is one of the participating centre. The aim is also to report survival rates in these centres and the differences between the centres.

Results

All cases of HN, BR & Cx diagnosed in year 2006 are being abstracted and recorded for analysis. Till date, 700 CX cases, 900 BR cases and 800 HN cases are accrued. Non-localized disease proportion are 75% in CX cases, 65% in BR & 80% in HN. Combination treatment including radiotherapy, contributed to more than 80% among CX patients, 80% in BR patients and 70% in HN patients. The cases are being followed up for analysis. Preliminary findings suggest a better follow-up response for cervix and breast cancer patients.

Discussion

The study will immensely help in generating a quality information on many aspects, as stage of disease, treatment provided and the survival rates across the institutions which will be in turn useful to provide guidelines for management of these cancers.

THE HUMAN DEVELOPMENT INDEX (HDI) AS A PREDICTOR OF CANCER INCIDENCE: A MODEL DEVELOPED ON POPULATIONS AROUND THE MEDITERRANEAN BASIN

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Background

In terms of current cancer epidemiology; Mediterranean populations (427 million in 2000) share similar and yet different cancer risks. No single measure can effectively capture the multiple dimensions of the cancer problem to quantify the burden of cancer. Incidence rates are the net effect of internal and external causal and preventive factors. In theory, incidence rates provide the clearest measure of the burden of exposure to risk and protective factors at the population level. The Mediterranean Oncology Society; a NGO with headquarters in Italy collected and published incidence data of all populations surrounding the shores of the Mediterranean. An analysis of all possible cancer risk factors is too tedious. The Human Development Index (HDI) is a composite measure that summarizes many population and characteristics including life expectancy, literacy, education and standards of living (GDP) and many others. Theoretically, it could be considered as a predictor that explains the heterogeneity of cancer incidence worldwide.

Methods

Age standardized Incidence rates (ASR) of Mediterranean populations published by MOS and HDI of the UN Development Program for these groups based on their HDI (between brackets). Group 1: France (.955), Spain (.949), Italy (.945), Cyprus (.912), Israel (.930), and Slovenia (0.923). Group populations were used for analysis. Populations were divided into three 2: Malta (.894), Croatia (.862), Libya (.840), Serbia and Montenegro (.821 and .822 for Montenegro) and Albania (.821). Group 3: Turkey (.798), Lebanon (.796), Tunisia (.762), Algeria (.748), Egypt (.716) and Morocco (.644). ASRs were checked in each of the 3 groups. Correlation between HDI as a predictor and ASR was done by simple regression analysis using data of all populations. Multiple regression analysis was attempted to test for independent effect of HDI components. The model was tested for another district in Egypt (Aswan) and for a non-Mediterranean country (Great Britain).

Results

For males, Group I appeared to be homogeneous except for France that had a high ASR and Cyprus that was similar to group 2. In the second group, Libya and Albania had ASRs rates closer to the third group. Turkey; that belongs to the third group, was rather similar to group II. A greater homogeneity was observed for females with the exception of Libya and Albania that had lower ASRs comparable to those of group III. In group III, Lebanon and Turkey had rates that were similar to some populations in group II. Results of regression analysis indicated a strong positive correlation between HDI and cancer ASRs ($r=0.767$ for males and $r=0.766$ for females). Multiple regression analysis did not indicate any dependency between health components of HDI as predictors of ASRs. The model was tested for another district in Egypt (Aswan). The expected ASR was 135.6; very close to the actual ASR that was 140.7 For Great Britain, the expected rate was 299.9 and the actual rate was 286.4.

Discussion

These results indicate that the HDI was correlated with ASR in most of the populations and could be used as a predictor of cancer incidence. The few exceptions suggest that factors that are not included in the HDI may play a role in the etiology of cancer either as risk or protective factors. More sophisticated multivariate analysis is warranted.

P-2-29

RELATIONSHIP BETWEEN FROZEN TISSUE BANK AND CANCER REGISTRIES IN FRANCE

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Background

The synergy between cancer registries (CR) and frozen tissue banks (FTB) may give opportunities to link molecular markers with clinical and social data in large-scale and representative epidemiological studies.

Our objectives were to describe the relationships between FTB and CR in France and to estimate the exhaustiveness of frozen samples in a French regional area.

Methods

In France, there are 58 hospital FTB and regional FTB networks. To describe the synergy between CR and FTB a questionnaire about the links with FTB was sent to the French CR (existence of a FTB in the area? specific contacts with FTB? work of data merging with FTB data? Other collaborative work?).

Midi Pyrenees area includes two hospitals FTB and one regional FTB network plus one CR (Tarn's county), given the opportunity to estimate exhaustiveness. The database of the 3 frozen tissue banks is confronted with the data of cancer registry for 2006, 2007 and 2008 to study the number of patients of Tarn who had a frozen sample. The exhaustiveness was also estimated for three specific type of cancer: colon, breast, lymphoma.

Results

Almost half of potential connexions between FTB and CR were effective and have led to collaborative works in 15% of cases. These connexions were higher for hematologic, cerebral, and colorectal tumours.

517 patients living in Tarn had a frozen sample for a cancer diagnosed in 2006 (N=131), 2007 (N=195) and 2008 (N=189). The exhaustiveness for the years 2006, 2007, 2008 was respectively 5%, 7% and 7%. For colon, it was 6% (20/311) in 2006, 10% (29/296) in 2007 and in 2008 (29/300). For breast, it was of 6% (23/367), 9% (35/377) in 2007 and 7% (26/360) in 2008. For lymphoma, it was 21% (7/34), 61% (17/28) and was yet not evaluable for 2008.

Discussion

In France, links are limited, and collaborative works are still sparse. Exhaustiveness and representativity of frozen tumours are also limited.

P-2-30

THE FIRST REPORT OF HOSPITAL-BASED CANCER REGISTRY FROM DESIGNATED CANCER CARE HOSPITALS IN JAPAN (JAPANESE INSTITUTIONAL CANCER DATABASE: JICDB)

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Background

The ministry of health, labor and welfare of Japan designated the cancer care hospitals (DCCHs) for equalization cancer care quality since 2002, there are 377 DCCHs in Japan now. In these hospitals, hospital-based cancer registry (HCR) is executed obligatorily and should submit the HCR data annually to the hospital-based cancer registry section of Japanese national cancer center (NCC). NCC collaborated with cancer registry experts in Japan, and defined the standard dataset in 2006.

Methods

We distributed the document titled "Data Submission Instructions to DCCHs" and the software named "the quality control tool" (QCT) in Nov. 2008 and DCCHs submitted the data to NCC in Mar. 2009. the submitted cases that were diagnosed during 2007. Proceeding to submission, DCCHs checked data quality using QCT, and wrote the data in CD-R and sent to NCC.

NCC checked these data and calculated from Apr. to Oct. 2009, and finally presented the brief report in Nov. 2009.

Results

327,889 cases were submitted from 305 DCCHs. Colorectal cancer were 47,152 cases (14.4%), stomach cancer 44,540 cases (13.6%), lung cancer 38,531 cases (11.8%), and breast cancer 31,171 cases (9.5%). UICC clinical stage of stomach cancer, over 60% cases were stage I and 85% of stage I were treated surgical treatment (include endoscopic procedure). In colorectal cancer, Stage 0 and stage I were 36%. In Lung Cancer, stage IV were 29%. In breast, stage 0 and I were 42%.

Discussion

On the basis of data of the population-based cancer registries in Japan, the incidence of all cancer estimated about 640,000 cases in 2005. So the proportion of patients visiting DCCHs is approximately 40-50%, because there are some patients' duplications between DCCHs. Most of DCCHs are large hospitals, but many patients visit also small hospitals. So this report does not show the situation of cancer care in Japan, but represents the situation in large extent, such as in stomach cancer, early cancer occupied major proportion.

This is the first report of HCR in Japan, and we will evaluate the cancer care in DCCHs through these data. Survival data have not calculated, we will try to collect data about death and survival.

P-3-01

CANCER INCIDENCE AND MORTALITY IN POLAND PREDICTION OF INCIDENCE FOR SELECTED CANCER SITES

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Background

Poland is one of the few countries with so large population (about 38 million) that run the national cancer registry.

Methods

The population data by age, sex and year, and population forecasts come from the Central Statistical Office, while the source for the cancer incidence and mortality data is the Institute of Oncology. The direct method with world standard population was used for the standardization of the rates for age. For the prediction model Dyba-Hakulinen method was used.

Results

In male population, the favourable changes took place in recent decades - almost 15 year-long decrease in lung cancer incidence. The disease with the highest growth dynamics and the second most frequent one is colorectal cancer. Stomach (the only cancer site with stable, distinctive for the last 40 years decreasing tendency) and prostate are the remaining most common cancer sites among men. In female population the leading cancer sites are breast, lung, colon, and rectum (colorectal cancer). In year 2007, for the first time lung cancer became the first death cause among women (13.7%) overtaking the most common so far breast cancer (12.9%). Breast cancer, predominating among women since the beginning of the last decade, shows plateau in mortality with constantly growing incidence rates. The halt in the trend or small decrease of mortality with simultaneous increase of incidence is the first symptom of the efficacy of the breast cancer secondary prevention in Poland.

The third place among cancers, with the highest incidence for last fiveyears, is taken by colorectal cancer. It is more and more worrying that mortality due to cervical cancer is constantly high, while in other European countries cervical cancer became a rather rare cancer site.

Discussion

Poland is a country, where two phenomena decide about high cancer risk in the population: the size of the risk factors' exposure, mostly tobacco smoke, and the delay in the introduction of the population programmes of early diagnosis and treatment of cervical, breast and colorectal cancer.

P-3-02

SPATIO-TEMPORAL VARIATIONS IN RELATIVE SURVIVAL FROM FEMALE BREAST CANCER IN THE GIRONA HEALTH REGION, SPAIN

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Background

Relative survival is a measure of the survival corrected for the effect of independent causes of death other than the cancer of interest. It is provided by population-based cancer registries and constitutes an indicator of the quality of cancer patient management, being useful for evaluating health care service performance. Geographical variations in relative survival from cancer could reflect differences in the effectiveness of health care. Temporal variations could not be captured. The breast cancer screening programme in the Girona Health Region (GHR) started in 1999 with a pilot, but was implemented sequentially from 2002. Spatio-temporal models take into account different geographic and temporal structures of the data in order to improve estimation and to investigate the spatio-temporal pattern of the data, if any. Our objective was to assess the spatio-temporal variation in relative survival rates from female breast cancer in the GHR.

Methods

2195 women diagnosed with invasive breast cancer were recruited in the population-based Cancer Registry of Girona, Jan-1995/Dec-2002. Patients were followed-up until Dec-2007. Relative survival and relative excess risk of death from breast cancer were calculated for small areas of the GHR. Cohort and period analysis were used. With spatial data, observed counts display greater variation than expected, i.e. extra-variation: i) independently and spatially uncorrelated (heterogeneity); ii) spatial dependence, consequence of the correlation of the spatial unit with neighbouring spatial units. Besides of a static non-spatial more, five more were estimated: pure spatial and spatio-temporal, with and without heterogeneity. Extra variation was captured by means of (small areas' specific) random effects and CAR for the spatial dependence. We also consider different types of space-time interactions. All models (adjusted for age at diagnosis; calendar year of diagnosis, and a contextual deprivation index) were estimated following a full Bayesian estimation approach.

Results

Overall survival was 66.9% for 1995-2007. The best model, in terms of goodness-of-fit, was the spatio-temporal model with heterogeneity and space-time interactions. Five-years relative survival for 2003-2007 was estimated as 73.31% (95% CI, 67.20%-80.20%). It was an increase in the relative survival, 2.75% annual. The representation of the hazard rates of the ABS in a map of the GHR showed certain geographical pattern (12% of variation in the hazard rates), i.e. some inequalities. Estimated temporal trends suggest that these inequalities could have decreased in time.

Discussion

The spatio-temporal model gives the best estimates of small areas' specific relative survival and risk of excess death. Therefore, it is preferable to standard methods for assisting in prioritising improvements in cancer health care.

P-3-03

AN APPLICATION OF THE CAPTURE-RECAPTURE METHOD TO ESTIMATE THE COMPLETENESS OF THE BULGARIAN NATIONAL CANCER REGISTRY

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Background

Bulgarian National Cancer Registry (BNCR) is established in 1952. Its completeness hasn't been estimated using quantitative methods. The two-source capture-recapture (CR) method offers a potential possibility to derive reasonable estimates of the completeness of cancer registration in Bulgaria.

Methods

The two-source CR method was applied, taking into account the presence of dependence between sources. There are three main sources of notification for BNCR: reports by clinicians (CI) and pathologists (P), and death certificates (DC). For groups of cases notified by one of the three sources, known total number of cases notified by the other two sources was compared with the corresponding two source CR estimate of the total number of cases. The overall completeness was estimated after combining the two sources with the same direction of dependency.

Results

A total of 153546 incident cases (C00-C96, ICD10), diagnosed in the period 2001-05 were included in the analysis. An overestimation of the total number of cases was observed in the groups of cases, notified by clinicians and by pathologists. This indicated a negative dependency between sources P:DC and CI:DC, respectively. An underestimation of the total number of cases was observed in the group of cases, notified by death certificates, which indicated a positive dependency between sources CI:P. The sources with the same direction of dependency (CI + P) were combined and compared with DC. The estimate of completeness for the period 2001-05 for all cancers was 94.7%. The completeness varied between age-groups (93.0%-96.0%) and cancer sites (95.2%-98.1%).

Discussion

The two-source CR method seems simple and useful tool for estimating the completeness of cancer registration. The estimates must be interpreted with some caution because the method accounts neither for three-source dependencies nor variable catchability between sources. Although its careful application may provide a reasonable estimate of the completeness of cancer registration.

P-3-04

ESTIMATES OF CANCER INCIDENCE AND ITS PATTERN FOR ENTIRE INDIA, BASED ON DATA AVAILABLE FROM CURRENTLY FUNCTIONING POPULATION BASED CANCER REGISTRIES

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Background

To achieve the goal framed by National Cancer Control Programme, the total magnitude of cancer for the entire country must be known. Unfortunately there is no cancer registration programme for entire India. At present there are 20 population based cancer registries are functioning in various states of India. Using these registry's data attempt has been made to estimate total magnitude of cancer by site, sex & residence for entire country.

Methods

At present there are 20 population based cancer registries are functioning in India under National Cancer Registry Programme, five for cities, seven for towns three for states and three for districts and two for rural areas. Various incidence rates for these registries for the year 2006 by age, sex & sites are recently published by NCRP. Using these rates, the incidence cases for urban and rural areas by sex & site are estimated separately by entire India. The urban estimates are based on the rates of city and town registries while rural estimates are based on the rates of state, district and rural registries.

Results

In India in 2006, 850 thousand new cancer cases are estimated. The estimated cases are at little higher side for females than for males. In estimated cases 35% belongs to urban areas and remaining 65% are for rural areas. In urban males the most frequent cancer sites are lung followed by larynx, esophagus and prostate in rural males stomach is the leading site followed by lung, tongue and larynx. In urban females breast is the most frequent cancer followed by cervix, ovary and esophagus but in rural female's cervix is the leading site followed by breast, ovary and stomach.

Discussion

On estimated figures for whole India, government can plan primary prevention of cancer, whose cause is known, particularly those related to tobacco use through health education, legal action and other appropriate majors. Secondary prevention of cancers amenable to diagnosis such as cancer of the cervix and breast by implantation of screening programmes. Government also can plan to provide treatment including pain relief terminal care with rehabilitation services. These estimated figures can be used to estimate various health indicators such as number of hospital days and visits required for cancer care for hospitals and patients. Number of beds, nurses, oncologists and monitory budget for cancer care for entire country can be estimated using these estimated incidence cases.

P-3-05

THE MORTALITY RATE AND DISEASE BURDEN OF MALIGNANT TUMORS FOR THE RESIDENTS IN HEBEI PROVINCE DURING 2004-2005

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Background

It is to reveal the mortality rate and diseases burden of malignant tumors of residents in Hebei Province during 2004-2005, and to provide basis data for prevention and further research of malignant tumors.

Methods

According to stratified cluster sampling method, we conducted a survey to 13,791,886 people of 18 cities and counties of Hebei Province in 2004-2005. Then analyze the age, sex specific and the geography distribution of malignant tumors mortality rate with the software provided by Ministry of Health of The People's Republic of China. The maximum expectant values were used in the life lost study. Some indicators such as PYLL, AYLL, SPYLL, and SPYLLR were used to analyze the situation of life years lost.

Results

(1) Total deaths in 2004-2005 in Hubei Province were 82,878 cases, with an average mortality rate of 600.92/10,000 and the standardized rate was 552.32/10,000. There were 18,424 cases died of cancer, accounting for 22.23% of all causes of death, ranking the second cause of death only after the cerebrovascular disease. Cancer mortality rate was 133.59/10,000 (standard rate was 119.24/10,000). For male, there were 11,748 cases died of cancer, mortality rate was 165.71/10,000 (standard rate was 153.66/10,000), for female there were 6676 deaths, mortality rate was 99.60/10,000 (standard rate was 85.62/10,000), the sex ratio was 1.66. (2) The five leading causes of death in order of the malignant tumors were lung cancer, gastric cancer, esophageal cancer, liver cancer and colon-rectum cancer from 2004 to 2005. (3) The potential years of life lost (PYLLs) of all cause of death of the sample residents in Hebei Province from 2004 to 2005 was 698,222.5 person-years, of which died of cancer was 156,542.5 person-years years, accounting for the 22.42% of all causes of death, the average years of life lost due to cancer was 8.50 years. For male, the PYLLs of cancer was 98,722.5 person-years, the average years of life lost (AYLL) was 8.40 years and it was 57 820 person-years, and 8.66 years old respectively for female. (4) For male, the PYLLs of the top 5 malignant tumors in order were liver cancer, gastric cancer, lung cancer, esophageal cancer and leukemia. For female, the orders were lungcancer, gastric cancer, liver cancer, breast cancer and leukemia. A greater affect has been taken to AYLL, which caused by leukemia, brain and nervous system tumor, bone tumor, breast cancer. (5) From the point of view of geographical distribution, the PYLLs of rural residents were higher than it of urban residents.

Discussion

Malignant tumors rank the second cause of death. Liver cancer, lung cancer, gastric cancer, esophageal cancer, breast cancer and leukemia did mainly causes of life lost.

P-3-06

ESTIMATING COMPLETENESS OF SELECTED CANCER REGISTRIES DATA IN TURKEY; AN EVALUATION USING THE CAPTURE-RECAPTURE METHOD

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Background

This study aimed to determine the completeness of registration "in the case of lung cancer" of the major cancer registry centers in Turkey

Methods

The diagnosis of lung cancer cases in 2004-2006 in the data base of five population based cancer registries (Izmir, Antalya, Bursa, Erzurum and Trabzon) and in the data base of The Turkish Thoracic Society which includes lung cancers which have the year 2005 as incidence date for the same provinces were matched. The completeness of cancer registry databases was evaluated using the two sources by capture-recapture method. To evaluate dependence between cancer registries and Turkish Thoracic Society databases we calculated Odds Ratios. If Odds Ratio is equal to one, we considered that resources to be independent.

Results

Estimated number of cases and 95% confidence interval were 2002±17.1 in Izmir, 478±12.2 in Antalya, 827±14.1 in Bursa, 265±5.5 in Trabzon and 219±23.7 in Erzurum. The completeness of centers was 95% in Izmir Cancer Registry, 84.7% in Antalya Cancer Registry, 87% in Bursa Cancer Registry, 90% in Trabzon Cancer Registry and 48% in Erzurum Cancer Registry. Odds Ratios were in 0.9 Izmir, 1.0 in Antalya, 1.0 in Bursa, 1.1 in Trabzon, 1.0 in Erzurum.

Discussion

The database of Izmir Cancer Registry, which is the first population based of Turkey and quite well improved in the name of completeness and validity, was found the highest level of completeness. Nonetheless, cancer registry system in Turkey has shown the need to be strengthened since for the other registries, the levels of completeness were quite low and especially in Erzurum, it was unacceptable for a population based registry. Cancer Registry Centers in Turkey needs to be supported in terms of features such as organization, personnel and training. Moreover this study has shown that application of capture-recapture methods may provide an alternative to traditional approaches for estimating completeness of cancer registration.

P-3-07

PROJECTION OF CANCER INCIDENCE UP TO 2020 IN JAPAN -ALL AND BY PREFECTURES

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Background

Cancer is the primary cause of death in Japan and the cancer control is the urgent and crucial concern. A population-based cancer registry is the fundamental for planning countermeasures, however, the accuracy of registration is fairly different among the prefectures and the improvement has been ongoing. In this study, we presented a future projection of cancer incidence up to 2020 as the reference for all and by prefectures.

Methods

In the previous study, we reported projection of the number for Japanese cancer incidence up to 2020, considering the age, period and cohort effect by using Nakamura's Bayesian Poisson cohort model that was based on the cancer incidence data from 1975 to 1994 and the Japanese population (1975-1995: observed, 1996-2020: estimated by WHO in 2001).

At first, we re-projected the Japanese cancer incidence for each site up to 2020 with considering the rapidly aging in society, using the up-to-date population data, and with new scenarios selected among twelve period effect's trends. Furthermore, we calculated cancer incidence up to 2020 for major sites by every prefecture with using the selected scenarios and compared with the reported number of cancer incidence in several prefectures.

Result

The re-projected Japanese cancer incidence showed a rapid increase in lung (male) and prostate, a moderate increase in colon (both) and breast. The increase rate diminished comparing with the previous projection in general.

Concerning prefectural incidence trends, several prefectures showed rather characteristic change. For example, the incidence of male's stomach in Okinawa showed consistent increase that was rather different from other prefectures.

Discussion

In this study we could show the incidence trend considering the effect of Japanese demographic change. In the future study, the deviation of the estimated incidence and the reported one would be discussed.

P-3-08

ANALYSIS OF THE IMPLEMENTATION, DEVELOPMENT AND QUALITY OF THE CASTILE AND LEON POPULATION-BASED CANCER REGISTRY (CLPBCR)

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Background

Castile and Leon is the largest region in Spain, divided in 9 provinces, with about 2.5 million population. The progressive implementation of the Population-based Cancer Registry in the region and the quality of the collected data between 2004-2008 is described.

Methods

All the new cancer cases in residents at Castile and Leon notified from the starting of the Registry till the end of 2008 and the indices of data quality agreed internationally were analyzed. For qualitative variables the frequency and the percentage were calculated and for the quantitative ones, the frequency and the arithmetic mean.

Results

The CLPBCR started in 2004 in 3 provinces: León, Soria and Valladolid (initial coverage: 44% of the Castile and Leon population). In 2006 the province of Salamanca began to notify and in 2008 the provinces of Segovia and Zamora set off their participation. These 6 provinces notified in this period of time 36,821 tumors (59.7% in males; 40.4% in females) and the annual mean of cases were 2,993 in León, 632 in Soria, 2,738 in Valladolid, 2,479 in Salamanca, 898 in Segovia and 1,119 in Zamora. In addition in 2008 the data about Hospital-based cancer Registries from the provinces of Burgos (1,214 tumors) and Palencia (877 tumors) was collected. During 2004-2008, a total of 39,680 new cancers were recorded by the Registry (59.8% in males, 40.2% in females) with a coverage of 93% of the Castile and Leon population. From this cases the age was unknown in 20 cases (0.05%), the percentage of cases of unknown basis diagnosis was 0.2%, 82% of cases were microscopically verified and the percentage of other an unspecified (ill-defined) cases was 2.4%.

Discussion

During 5 years the CLPBCR has incorporated complete information about 6 out of 9 provinces of the region and partial information (only data of Hospital-based cancer Registries) from other 2. The data included give acceptable indices of quality, hoping to finish the complete implementation of the Registry during current year.

P-3-09

EPIDEMIOLOGICAL ANALYSIS OF THE DISTRIBUTION OF CANCER IN CORDOBA CITY 2004-2007

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Background

The RPTC was born in Cordoba before the necessity to know the incidence of cancer in the city and its impact in the health system. The RPTC is essential source for programming of control measures and early disease detection.

Methods

The RPTC is a Population base Registry that captures actively all the new incidents cases from July 2003 in all resident person in Cordoba with a permanence of one year or more. All the malignant tumors, (invasive and in-situ), non-melanomas of skin and the tumors of the SNC including benign and uncertain evolution, are registered. The software used for the load and analysis of data is Can Reg 4. Quality controls are governed by rules established by IARC, evaluating the percentage of histological verification, the reason mortality-incidence and Death Certificates.

Results

Since March 2003 to date, Cordoba works to know the incidence of Cancer through the creation of Population Base Registry of Tumors, declaring obligatory the notification of all suspicious or verified case of neoplastic origin. According with population stimates, Cordoba´s city have 1.333.593 habitants (635.571 men and 697.022 women). The number of cases for period 2004-2007 is 12.873 (including malignant and uncertain tumors of the SNC and non melanomas of skin) 5.871 were diagnosed in men and 7.002 in women. The crude and fit rate in all the sites for men is 234.8 and 225.3/100.000 and 251.8 and 200.3 respectively for women.

Discussion

The RPTC is able to provide relevant information about the incidence of cancer in our city, however it's necessary to further improve data quality by increasing completeness in search of them. The primary goal of our registry is to assess the magnitude of the disease through the incidence rates and assist in the implementation of health policies at local level as well as participate in international publications which would successfully validate our work.

P-3-10

SIRCAN: SOFTWARE VALIDATION SYSTEM TO IMPROVE THE QUALITY OF DATA IN A CANCER REGISTRY

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Background

The main objective of the Cancer Registry of Cuba is to collect, store, process and analyze information on all cancer cases diagnosed each year. He is responsible for producing statistics on the incidence of cancer, assess and monitor the impact of the disease in the community, the planning of human and material resources for the prevention, diagnosis and treatment of cancer. It is the basis of clinical and epidemiological research, the development of intervention strategies for designing cancer control programs. So you need a software to validate the information collected and raise the quality of it in terms of quantity and quality. Complying with international standards for cancer registration.

Methods

Design an application is able to connect to a central database, verify and validate real-time input data, supports any database system in the first phase of development and use kdevelop mysql, multiplatform and amendment allowing software libre according to the needs of each country or locality. It may be a member and receive information from FreeMED medical record system which would create a whole suite with which you can import data from it.

Results

Tool designed to be achieving high levels of validation and data quality in the output tables.

Discussion

When you compare our software with Canreg4, the SIRCAN offers the advantages of validating the information from its introduction, the dictionary is based on the topography and morphology of the International Classification of Diseases for Oncology, Third Edition (ICD-O-3) allowing it to introduce contemporary morphological classifications, while the Canreg4 using ICD-10 coding limiting their morphological dictionary.

P-3-11

NATIONAL CANCER INCIDENCE ESTIMATION BY USING THE LOGISTIC REGRESSION MODELS

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Background

Information about cancer incidence is needed to plan, monitor and evaluate national and regional cancer control programs.

In Japan, nation-wide information about cancer incidence is estimated from population-based cancer registries and national vital statistics.

Japanese level of completeness for cancer registries is relatively lower than many other countries.

So the several aspects for cancer registries must be improved as soon as possible.

Before then, we need the most suitable estimation of nation-wide cancer incidence for grasping the current situation.

Methods

In this study, we note the method to estimate the number of nation-wide cancer incidence and propose a new method, which is applicable to the countries whose degree of completeness for incidence is not so good and oppositely the information of mortality is complete.

In Japan this is just the situation that the method proposed in this study can be applied.

Our method is based on the logistic regression analysis and the information criterion for model selection.

We set DCN-rate as explanatory variable and MI-ratio as response variable.

By using these models, we estimate MI-ratio when DCN-rate is equal to 0%.

Results

Applying our method to the estimation of the Japanese cancer incidence in 2004, we obtained about 1.3 times larger number than current estimation.

The reported number of Japanese incidence is 650000 in 2004, while the number estimated by our method is 910000.

Discussion

In this study, we propose a method to estimate nation-wide cancer incidence.

This method is applicable to the countries whose degree of completeness for cancer incidence is not so good and oppositely information for mortality is complete.

The estimated number is regarded as the number adjusted for the degree of completeness of cancer registries.

By our result, the reported number of Japanese cancer incidence is underestimated about 30%.

P-3-12

PBCR BHOPAL-TEST OF CANCER REGISTRATION & DATA PROCESSING SOFTWARE DEVELOPED BY NATIONAL CANCER REGISTRY PROGRAMME INDIA

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Background

Registries all over the world are in peruse of developing new techniques and tools to achieve uniformity, completeness, better coverage for high quality cancer registration. In recent time use of computers and software have become major parts of these developments.

Methods

Aimed to overcome the disparity in the data formats, errors in data entry and delay in data submission by the registries, National Cancer Registry Programme (NCRP) of Indian Council of Medical Research, is developing a software called PBCRDM. The software is being tested at Bhopal and Mumbai registries. The Bhopal PBCR has utilized the software for entering the data, quality checks, listing potential duplicates and listing of potential matches of incidence and mortality.

Results

Adaptability - The user manual is elaborative, technical assistance by the software team is easily available through telephonic/internet communication.

Performance - Using the online data entry checks, batch processing, online duplicate checking and online matching of death records an early submission of error free data was possible. Data entry and report generation for the years 2007, 2008 and 2009 has been completed.

Benefits; Records of multiple years could be handled simultaneously. With the use of software mortality records were created for incidence cases with death details, similarly DCOs were created for unmatched cancer deaths. Thus lot of time was saved from re-entering two data sets. Batch processing helped in monitoring and assessing the performance of field work. Instant follow up of DCOs and cases with incomplete information was feasible as these cases were easily identified while data entry was done.

Since the year 2007 matching of all cause mortality with incident cases is being done using the software. This was earlier done manually and using Microsoft excel. Now, this database is imported into the PBCRDM software and matched with the incident cases thus saving considerable time. A significant improvement in mortality registration has been recorded. Time taken for report generation has reduced from 36 months to 8 months and now the Bhopal PBCR is entering the 2010 data on-line; both incidence and mortality. Tabulations of the 2009 data and updates of the 2010 data can be demonstrated while making this presentation.

Discussion

Use of PBCRDM software has enabled Bhopal Registry in improving the quality of registration and immediate finalization of annual reports with reduction in manpower.

P-3-13

THE EVOLVING ROLE OF CANCER REGISTRY: INFORMATION TECHNOLOGY AS TOOL FOR INTEGRATION WITH ONCOLOGY DEPARTMENTS

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Background

There is a need for fine tuned evaluation systems in oncology for a number of reasons including increasing cancer burden due to population ageing, selecting on of effective interventions to achieve the best results with limited resources, and producing of complementary evidence of the efficacy of the interventions. To expand the role of registries in cancer control, we developed for Umbria region cancer registry, Italy, an experimental and flexible cancer registration system that allows efficient management of many different data sources.

Methods

Management System for Umbria Cancer Registry (S.G.RTUP) is designed and implemented by Web 2.0 technology. "Web 2.0" is commonly associated with web development and design that facilitates interactive information sharing, interoperability, user-centered design and collaboration on the World Wide Web.

The tools for our Web application are in the AMPA Module. AMPAX stands for a combination of different software: Apache, Mysql, PHP, Ajax and XML. They work together managing the data easily and implementing different algorithms.

Our systems implement security protocol following ISO/IEC 27001:2005 "Information technology - Security techniques - Information security management systems - Requirements".

Results

The S.G.RTUP repository is devised as a modular and extendible structure by means of the entity-relationship databases' principles. Tables are linked to each other by referential integrity constraints that ensure information consistency. Thanks to management systems, S.G.RTUP is tightly integrated to the project of the Umbria Oncological Network in order to guarantee a well-timed epidemiological surveillance and also as an instrument forevaluating oncological activities. Professional people involved in a regional level with health services participate the project defining aims and variables, and also inserting data into the system through an agreed protocol.

Discussion

The Umbrian Population Cancer Registry (R.T.U.P.) has introduced a permissive computer technology in order to improve:

- the timeliness in the production of information,
 - the quality of the collected data,
 - the ability of the diffusion of collected information,
- and also to allow:

-the total integrability with Regional Health System's information systems already available (HOR, R.P.H.S.L., prescriptions, specialist examinations) or under realization (sole application of Umbrian Pathological Anatomy laboratories, sole Regional Program of screening services and oncological computerized case sheets);

-the expansion of the collected information within specific - site incremental solution projects. High resolution projects can be classified into two types:

- a)autonomous: completely carried out by the Registry staff but with wide local diffusion of the information (breast, colon/rectal, thyroid, melanoma skin and polyp cancers)
- b)cooperative: based on traditional joint data collection by the Registry staff professionals through controlled access to the specialist files (melanoma skin and thyroid cancer).

Sensitive data protection problems have been carefully considered during the realization of the registry through web oriented technology by setting permissions and having online professional people access policies.

The new cancer registry features allow an important expansion of its scope (e.g. quick evaluation of health interventions). Even entirely new research questions may be addressed with high quality population-based data by identifying study aims and relevant variables upon discussions with health professionals.

P-3-14

USE OF DIGITAL TRANSFER OF DATA. A STEP TOWARDS AUTOMATED CANCER REGISTRATION

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Background

Cancer registration in India is done through active follow-up method. Regular visits to the sources of registration are made to collect information. The sources include diagnostic & treating centers. The quality and completeness of cancer registration depends on the information recorded in the hospital records and information provided by the patients or their relatives and the frequency of visits to these sources.

The growing population and increasing number of cancer care units at Bhopal has resulted in the increase of the number of visits to the sources of registration and consecutively delay in data submission and lack of data quality. Due to increase in the number of visits to the cost of registration has also gone up.

Methods

In the year 2000, an attempt was made to improve the quality of data with early submission. Data of two sources was transferred to the registry at the end of each month. The transferred data was indexed on Hospital Registration Number and date of up-dation of Hospital records. The transferred data was then evaluated for completeness of information. Medical records were re-scrutinized for cases with incomplete information. Use of transfer of data reduced the time taken for data collection, reduced the number of visits for re-abstraction and also improved the completeness of data. Since the year 2005 medical records of all the major sources have been computerized and the information required by the registry is filtered out from their hospital data base. The filtered information is then transferred digitally to the registry and is processed for registration. Transfer of information takes place weekly.

Future Plans; Linkage of major sources of registration with the registry, so that all the cancer notifications and cancer deaths are notified to the registry online. Cases will be only followed-up for incompleteness.

Results

The use of the New Software developed by NCRP, electronic transfer of data has resulted in a significant reduction in the number of visits made to these sources. Cases registered from these sources had duration of stay recorded in 95 % cases, 90% cases had microscopic verification, information on sub site was available in 74% cases and treatment details were present in 86%. The manpower saved has reduced the cost of registration from these sources.

Discussion

Computerization of sources, digital linkage of sources of registration and use of New software developed by NCRP has resulted in a significant improvement in the quality of data, reduction for time taken for submission of data and has cut down the cost of registration.

P-3-15

EPIDEMIOLOGICAL REPORT ON MORTALITY TUMOR PROVINCE OF NEUQUÉN. 2001 TO 2007

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Background

This is a descriptive study of mortality trends as an indicator of the effect on tumors, in order to observe the epidemiological behavior of the same, so that information can be used for decisions and actions in different levels (institutions, communities, etc.) involved in this problem.

Methods

We selected the years 2001 to 2007; the secondary source used was province data-based deaths, System Registry Vital Facts, Epidemiology and Statistics Direction, Department of Health. Throughout the election period, the tumors were the leading cause of death.

Results

Their relative weight proportional increased slightly, from 23.85 in 2001 to 25.89 in 2007. Of the total of those killed by tumors were selected residents in the province of Neuquén, and thus were excluded from the analysis non-residents. General mortality rates for tumors show a rising trend in the period evaluated, from 3,907 deaths per tumors, 2,143 were men (54.85%) and 45.15% female. The incidence rate by sex reinforces an increased risk in men of 120.93 compared with 99.36 per 0/000 for women. By grouping tumors according to their origin we can see the wide difference in the frequency of some groups in general mortality. When analyzing the sexes separately, we see that these locations vary their relative importance, in the first 6 locations for women breast, colon-rectum, lung, cervix, stomach and ovary, and for male lung, stomach, prostate, colon-rectum, esophagus and pancreas. According to geographical areas, it assesses the impact of mortality tumors according to the Sanitary Zone of residence of cases, this has been calculated for different indicators to see the risk in the period and the same trend in the years, including the Years of Potential Life Lost (YPLL) whereby, among the five leading causes of death grouped, tumors ranked third in 2001-2002 and the first in the years 2004-2006. Total Years Lost due to tumors in the period was 47992.5 years, the breakdown for each of the years studied shown an upward trend. The mortality rate for tumors of the province for this period was 110.14 (0/0000) and the same in the Nation was 150.60. But when calculating the Standardized Mortality Ratio (SMR) deaths were expected total 3301, deaths reported 3907, the ratio between them is equal to 118 (95% higher than 122.1 and 114.6).

Discussion

In the province of Neuquén in the period 2001-2007, tumors were the leading causes grouped in overall mortality and weight proportional increase. The incidence of these events is higher in males, with a male/female ratio of 1.2/1. The impact it's greatest on the elderly people. The location is no difference according to sex, being the most common for men lung, stomach and prostate, and in women in breast, colon and lung. The first approximation by geographical areas indicates a slight predominance of the event in some sanitary zones, however this section deserves a more thorough analysis, adjusting rates for other variables, in addition to the age structure of populations, to improve the conclusions in that regard. As for the adjustment of rates, SMR allows us to conclude that the province of Neuquén has an excess mortality by tumors, in this period compared with the Nation of 18%.

As a final conclusion, it is considered appropriate to clarify, this report is framed at the start of operation of the Registry of Tumors Neuquén Province, as a strategy for monitoring non-transmissible diseases, based on routine records of chronic diseases, which will give us more information in view of improving decision-making in both the inter-actions, as in prevention and control measures of health events.

P-3-16

ABSTRACTING STAGE IN POPULATION-BASED CANCER REGISTRIES: THE EXAMPLE OF ORAL CAVITY AND OROPHARYNX CANCERS

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Background

Population-based cancer registries (PBCRs) are instruments to provide cancer incidence to promote cancer control and etiological research. A setting of mandatory (standard) variables is routinely collected for patient and tumor. One recommended variable is tumor stage, which supplies information on disease status and is an essential prognostic factor. However, it is not considered as necessary information to be collected by the PBCR. There are studies showing the value of stage as a prognostic variable to evaluate survival, socio-economic status, race and ethnics differences. Our aim is to analyze the feasibility of PBCRs in abstracting TNM for oral cavity and oropharynx.

Methods

From Cancer Incidence in Five Continents, Volume IX (CI5-IX), 173 PBCR referred to collect stage, to at least one site, using any staging system [14] and among them, we identified 53 that recorded TNM stage for all tumor sites, or oral sites: 2 in Latin America, 13 in North America, 6 in Asia and 32 in Europe. We invited them to send us data on TNM stage for oral cavity and oropharynx tumors for the period 1998 - 2002.

Results

We analyzed 23,935 cases of oral cavity (OCC) and oropharynx cancer (OPC) from 13 PBCRs on the aggregated period 1998-2002. Complete TNM stage for OCC was 52.7% for males and 47.6% for females; for OPC, it was 56% in both genders. Incomplete stage on OCC and OPC ranged from 22 to 25%. Missing was about 18% to 27% (most common in oral cavity). Missing stage was significantly higher in males for OCC aged ≥ 70 years, OR 1,64 (1,39-1,94). Our results demonstrate that OPC tend to have more complete stage, when compared with OCC.

Discussion

Although OCC can be mostly diagnosed by visual inspection, these results highlight the fact that information on stage can be a reliable indicator of access to healthcare and diagnosis awareness. Our results demonstrate that is feasible for PBCR to collect stage, although improving completeness of this information needs further technical training and international recommendation to adopt TNM stage as a standard variable for the PBCRs.

P-3-17

IDENTIFICATION OF ASIAN/PACIFIC ISLANDERS IN US CANCER REGISTRIES AND RESULTANT CANCER RATES

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Background

NAACCR has developed an algorithm using a combination of NAACCR variables to classify cases directly or indirectly as Asian/Pacific Islander (API) for analytic purposes. This algorithm recodes cases with a race code of Asian NOS to a more specific Asian race category, using the birthplace and name fields (first, last, and maiden names).

Methods

Birthplace can be used to indirectly assign a specific race to one of eight Asian race groups (Chinese, Japanese, Vietnamese, Korean, Asian Indian, Filipino, Thai, and Cambodian). Names can be used to indirectly assign a specific race to one of seven Asian groups (Chinese, Japanese, Vietnamese, Korean, Asian Indian, Filipino, and Hmong).

Results

The application of this algorithm has led to more robust estimates of cancer incidence in these API groups. Cancer rates for the combined API-American population and the subgroups will be presented and compared to published rates for countries of origin when possible.

Discussion

The NAACCR algorithm demonstrates the use of existing data items to improve the quality of other non-specific data items. This methodology permits estimation of cancer rates in specific American populations so that cancer disparities can be addressed and etiologic differences can be considered.

P-3-18

Withdrawal

P-3-19

CHANGING CANCER INCIDENCE PATTERN, TREND AND FUTURE BURDEN IN CHENNAI, TAMIL NADU, INDIA

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Background

This paper investigates cancer trend in Chennai (formerly Madras) city in Tamil Nadu state, Southern India and predicts future cancer burden using data on 89,357 incident cancers from Madras Metropolitan Tumour Registry during 1982-2006, published incidence rates from Dindigul Ambilikkai Cancer Registry during 2003-06 and population statistics for Chennai and Tamil Nadu during 1982-2016.

Methods

Age specific incidence rates observed in Chennai cancer registry were modeled as function of age, period and birth cohort using NORDPRED software to predict incidence rates and number of cancer cases for the period 2007-11 and 2012-16. Predictions for Tamil Nadu state were computed using weighted average of predicted incidence rates of Chennai registry (entirely urban population) in respective periods and current rates of Dindigul district (predominantly rural population).

Results

Trend of age-standardized rates of all-cancers together, female breast, lung, large bowel, prostate, tongue, thyroid, leukemias and lymphomas increased and that of cervix, stomach and esophagus decreased in Chennai. An increase of 32% in average annual all-cancer cases is predicted during 2012-16 compared to 2002-06: 19% due to changes in cancer risk and 13% due to demographic effect. Site-specific changes in predicted burden ranged from -46% (cervix) to +100% (thyroid) for women and -21% (esophagus) to +42% (prostate) for men. The average annual cancer burden predicted for 2012-16 is 6,100 cases in Chennai and 55,000 cases in Tamil Nadu with female preponderance and bulk of cancer cases belonging to 35-64 years of age. Breast cancer would dislodge cervix to emerge as top ranking cancer in Tamil Nadu and cervix would be surpassed by lung, stomach and large bowel in site ranking irrespective of sex in Chennai by 2016.

Discussion

Concerted efforts from all quarters are essential for assessment and allocation of resources to develop infrastructure for cancer control and care to tackle future cancer burden in Tamil Nadu.

P-3-20

TOOL TO COMPARE CANCER REGISTRIES GUIDELINES AND THEIR IMPLEMENTATION IN LOW AND MIDDLE INCOME COUNTRIES

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Background

The operation of cancer registries in developing countries differ remarkably compared to developed countries because of the absence of modern health care infrastructure resulting into the need of manual active search and collection of the data. Although efforts have been made to standardize the methodology with respect to the selection of variables routinely collected, substantial differences in the procedures to retrieve the information, check for duplicates and in particular to handle missing information do exist. Indeed, missing information at the source is one of the main reasons of different practices, for which international associations provide no specific recommendations.

Methods

First phase of the study consists of conducting a survey among the 20 active registries to assess actual practices. This will be done through a questionnaire accompanied by test examples; the staff of the registries will be asked to code the examples. A questionnaire has been developed with sections that address case-finding procedures, number and type of data sources, practices in handling missing/uncertain information on residential status, age, diagnosis of malignancy, and procedures to search for duplicates.

The information obtained through the questionnaires will be analyzed and summarized in a detailed report. It will provide the basis to develop and complete the detailed protocol for the second phase of the study.

Results

It was observed during the UICC workshop held at TMH in 2008 that the main differences among different registries are the following:

Follow-back procedures for confirmation of residential status.

Inclusion in numerators of cases of uncertain residence: some registries include them, others do not.

Some registries follow the IACR rules, others the ENCR recommendations for date of diagnosis.

No common standard procedure to search for duplicate registrations within each registry.

Discussion

Diverse current practices may generate substantial artificial differences in incidence and survival rates; it would be useful therefore, to develop common tools to assess the differences in registry operation in low and middle income countries.

P-3-21

EFFECT OF CHANGES IN INCLUDED PREFECTURES ON THE ANNUAL TRENDS IN CANCER INCIDENCE IN JAPAN

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Background

In Japan, national annual incidence estimates have been published since 1970s, based on population-based cancer registries. The trends in those data are difficult to interpret, because the set of included prefectures/cities have been changed for each year, and the completeness of the included data may also have been different. The present study aimed to examine the annual trends in cancer incidence and death certificate notification in different sets of prefectures in Japan.

Methods

We used data collected as part of the Monitoring of Cancer Incidence in Japan (MCIJ) project. The years at diagnosis were between 1993 and 2004. We calculated the crude incidence rates and the proportion of deaths certificate notification (DCN) for each year. We analyzed all cancers and 7 cancer sites: stomach, colon, rectum, liver, lung, breast (female), and prostate. We examined three sets of prefectures: 1) "different set": a set of prefectures meeting the inclusion criteria of the national estimates, determined each year separately (10-14 prefectures); 2) "fixed-9 set": 9 prefectures continuously included in the national estimates since 1995 (Miyagi, Yamagata, Kanagawa, Niigata, Fukui, Shiga, Osaka, Saga, and Nagasaki); and 3) "fixed-5 set": 5 prefectures continuously included in the national estimates since 1985 (Miyagi, Yamagata, Fukui, Osaka, and Nagasaki).

Results

The trends in incidence rates were similar among the three sets of prefectures for all cancers and all sites, except male liver cancer. For male liver cancer, the "different set" exhibited no clear trends in the incidence rates, while the other two sets exhibited decreasing trends since the late 1990s. The birth cohort effect in the early 1930s was less clear in the "different-prefecture set". Though the trends in the DCN proportions were similar among three sets, the DCN proportion for prostate cancer decreased in all sets.

Discussion

The observed disparities in male liver cancer might be due to geographic variations in incidence rates. The increase in prostate cancer incidence rates might partially reflect improvement of completeness.

P-3-22

IMPLEMENTING A WEB-BASED, REAL-TIME VALIDATION, DATA SUBMISSION SYSTEM FOR CANCER REGISTRY IN TAIWAN

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Background

The Taiwan Cancer Registry, founded in 1979 by the Department of Health, is a national wide, population-based cancer registry with the collection of information on cancer patients newly diagnosed in hospitals with 50 or more beds. Although the reporting hospitals submit data in electronic files for several years, but there was no on-line data transmission authorized by the government due to the potential risk of data leakage. All cancer registration data were submitted, after encrypted, via registered mail. Therefore the waiting and processing time for each batch of submitted data is needed to be shortened.

Methods

A web-based data submission system was designed to improve the data reporting process. The system is written in PHP language and provides services through Apache web server. The data security mechanisms include SSL secured data transmission protocol as well as IC card identification for log-in. A comprehensive data validation engine is also designed to provide real-time validation for data accuracy and quality.

Results

The web-based data submission system has several features which is superior to the current mailing submission process. First, the on-line submission allows cancer registrars and the Registry to submit and receive data simultaneously. Both of the sides will get an electronic receipt informing that the data have been submitted to the system. Second, registrars are requested to log into the system with using their National Health Insurance IC card, which the user identification is more robust than traditional manually type-in id-plus-password method. And all the data transmitted between registrars' browser and the system are encrypted by a 128-bit SSL protocol. These designs ensure the security of data and mainly eliminate the risk of potential data leakage. Third, the flexible and comprehensive data validation engine allows the Registry to update the data checking rules (approximately 450 rules enforced now) with low cost and minimum staff training and education. Cancer registrars can also be benefit from the engine which provides them real-time quality report for their data. And the data quality checking rules will be automatic updated without manual operation.

Discussion

This study demonstrates a web-based data submission system which could be applied on a national wide cancer registry for improving timeliness and quality of data while ensuring data security. Cancer registrars and the registry could both be benefit from this system.

P-3-23

CANREG5 AND CANCER REGISTRATION

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Background

Cancer registries need a tool to input, store, check and analyse their data. If these data are also coded in a standard way, it makes possible the production of comparable analyses across registry populations.

Methods

CanReg5 is a user friendly and flexible software package to support population based cancer registries in producing reliable data on cancer incidence. It has modules to carry out data entry, quality control, consistency checks and basic analyses. To guide the user, there is also online help functionality and a downloadable handbook.

Results

One of the most important changes from previous versions of CanReg is the fact that it is managed as an open source project. Other improvements include stronger network support, a more modern database engine as well as multi-platform support.

Using open standards and built-in tools the users can tailor and set up the CanReg system to suit the needs of their registry, but still follow the international standards for comparability of incidence data.

CanReg5 allows cancer registries to improve their data quality and facilitate training of cancer registrars worldwide and is available for download free of charge from the IACR website. English, French and Portuguese versions are available with Spanish and Russian versions under production.

Discussion

Future plans for the project will be presented.

P-3-24

THE EGYPTIAN EXPERIENCE IN DEVELOPING AN IT SUPPORTED PUBLIC DOMAIN NATIONAL CANCER REGISTRY PROGRAM

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Background

Until 10 years ago, no cancer incidence data were available for Egypt due to complete lack of population-based cancer registries. The first registry was established by the Ministry of Health in 1998 in the Middle of the Nile delta (Gharbiah governorate) within the context of the registry project of the Middle East Cancer Consortium. Data was published in the latest edition of CI5. The registry is limited one governorate of approximately 4 million population that is difficult to be accepted as representative of the more than 70 million population of Egypt. Furthermore, the registry is based on the classic manual pen and paper techniques. The last available report is that of 2002 published as registry report. To get more recent results, one has to wait till the next report is issued.

Methods

In 2008, the National Cancer Registry Program of Egypt was initiated as collaboration between the ministries of Communication and Information Technology, Health, and Higher Education. The vision is to achieve better understanding of the cancer burden to achieve the best possible cancer control. The mission is to establish a network of population-based cancer registries in 5 governorates spread over Egypt and including the currently operational cancer registry in Gharbiah with a central registry in the National Cancer Institute in Cairo. These 5 governorates represent different regions in Egypt and cover about 22% of Egyptian population. Cancer centers without defined population may collaborate to establish a national database that could support research purposes. The wealth of data that will be collected will be used for data mining to achieve better understanding of the burden of cancer and its possible etiologic risk factors that helps to achieve best possible cancer management and prevention. An important mission is to allow online data entry from peripheral registries and to create a public domain database that allows online analysis of the most recent data base to get the descriptive statistics of selected cancer sites.

The program utilizes state-of-the-art data mining technologies to extract a variety of health indicators. A high-end data transfer application was developed to transfer patient's data to the National Cancer Archive.

The program utilizes state-of-the-art data mining technologies to extract a variety of health indicators. A high-end data transfer application was developed to transfer patient's data to the National Cancer Archive.

Results

To-date, the program is fully operational in 4 registries. Results were published for 2008 for Aswan governorate. By the end of current year, results will be published for 2009 for the 4 registries. Online data entry and analysis is currently being implemented. During the meeting, a short online demo for data entry and analysis will be ready.

Discussion

This experience is the first in Egypt that shifts from the pen and paper method to IT support. The fact that the program is successfully implemented in 4 registries is a proof for the feasibility of use of modern IT in cancer registry activity and to get an online public domain database. The model is recommended for trial in developing countries with similar infrastructure as Egypt.

TRENDS IN THE KARACHI SOUTH CANCER INCIDENCE (1995-2009). PREDICTIONS TO 2020 AND IMPLICATIONS TO THE CANCER CONTROL PROGRAM OF PAKISTAN

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Background

Cancer today is a major public health issue in Pakistan, as in all developing countries and assessment of the cancer burden is essential for cost-effective healthcare planning.

Methods

Karachi Cancer Registry (KCR) established in 1995, as a sentinel registry for Pakistan has ever since, continuously registered all cancers in Karachi South, a district of Karachi, population [1,724,915 (males 929,394, females 795,521)], census 1998.

Results

Average annual percent increase for cancers in Karachi South (1995 to 2009) was 1.2 in males and 1.7 in females. It is site and age-group dependent. In males the most remarkable increases were seen for oral cavity, lung, prostate and colo-rectum cancers; in females it was breast, oral cavity and cervix cancers. Most cancers (67.4% M; 78.1% F) occurred in the 15-64 years age group, with an average annual percent increase of 2.14 (M) and 2.08 (F).

Discussion

The increase in the number of cancer cases is likely to be multifactorial, partially an actual increase independent of the demographics or demographic due to an ageing population. The current increase is less likely to be an artifact, as there has been no intervention nor have methodologies of data collection and coding practices changed. At present, without any responsibility of the government and a lack of health insurance, the cancer burden falls disproportionately on the socioeconomically deprived individuals and families and especially on women; the vast group of humanity already facing deficient health care. A sudden escalation of rates will be observed if oral cavity, breast, cervix, colorectal and prostate cancer screening is initiated.

P-3-26

ELECTRONIC DATA STANDARDS TO ENHANCE CANCER REGISTRATION: NORTH AMERICAN ASSOCIATION OF CENTRAL CANCER REGISTRIES AND OTHER INITIATIVES

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Background

Collecting and transmitting data electronically is efficient, cost-effective, and scientifically useful. Benefits include faster, more complete case finding; more complete diagnostic and treatment data; increasingly sophisticated use of tumor registrar knowledge, and enhancing capacity to support prevention and control programs.

The North American Association of Central Cancer Registries (NAACCR) recognized the need to develop interoperable data collection and transmission standards in 2006, and established work groups to research and develop interoperable data collection and transmission standards. Three goals are to identify or develop data coding standards complying with international standards; identifying transmission standards that comply with international standards; and integrating surveillance data standards into international electronic health record (EHR) standards, which increases the ability of cancer surveillance experts to positively affect prevention and control activities.

Methods

Projects to develop electronic cancer data transmission standards require multiple subject experts. Expert tumor registrars, clinical oncologists, representatives from standards organizations, software and database developers, central registry staff, and epidemiologists all have necessary skills.

This presentation provides a comprehensive overview of NAACCR electronic data transmission projects. One focus is a pilot project the NAACCR Clinical Data workgroup carried out. The primary project goal was to develop a replacement for the NAACCR data transmission file. The workgroup determined that Health Level 7 Clinical Document Architecture (HL7 CDA) offered the correct mix of compliance with international EHR standards, the ability to accommodate various types of data (codes, texts, images, etc.), and an interface that is self-documenting.

Results

HL7 CDA is useful as a method for transmitting data from providers, such as hospitals, to central cancer registries. However, the standard has limitations that militate against adopting it as a standard for transmitting cancer data.

This discussion outlines the positive and negative aspects of adopting HL7 CDA as a standard for transmitting cancer surveillance data.

Discussion

Cancer surveillance data acquisition changing in North America. To prepare for new, interoperable EHR standards, including meaning (semantics) and structure (syntactic), NAACCR is investigating means to increase the value of surveillance data. Outcomes of NAACCR projects will affect the ability of cancer prevention and control programs to develop effective programs that are based on scientifically valid surveillance data.

P-3-27

VARIOUS CHECKS IN THE STANDARD DATABASE SYSTEM FOR THE REGIONAL CANCER REGISTRIES

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Manual work is required at every stage of the regional cancer registration: receiving and sorting out data, recording, registration, addition and modification of data, and data update. Therefore, operators are likely to make such simple mistakes as omissions and incorrect data entry, or fail to perform appropriate coding because of their lack of knowledge and experience, or misunderstanding. It is impossible to completely prevent these mistakes, but our standard database system for the regional cancer registries (hereafter referred to as "standard DBS") aims to incorporate the appropriate check system for each stage of the registration, and thereby accumulate the accurate registered data and reduce the manual handling (e.g. visual inspection and collation by reading out).

The standard DBS uses the definition of codes and rules for checking which were formulated by the Japan Cancer Surveillance Research Group in the Third 10-year Comprehensive Strategy for Cancer Control Program (2004-13), based on the inspection in the selected regions where the standard DBS had been introduced. We show here what kind of check systems are incorporated in the standard DBS to check the validity and consistency of data, and how they are carried out.

P-3-28

ESTIMATION OF THE CONFIDENCE INTERVALS OF NATIONAL CANCER INCIDENCES IN JAPAN

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Background

The estimated national cancer incidences without confidence intervals in Japan have been published from 1993 to 2004 on the website in National Cancer Center. The objective of this study was to get the confidence intervals (CIs) of national cancer estimates focusing only on an incoming and outgoing cancer registries used for the estimation. The resampling method was used to calculate the confidence interval of cancer incidences.

Methods

Population-based cancer registries' data were collected in the Monitoring of Cancer Incidence in Japan (MCIJ) project. The data of cancer registries with two conditions were used to estimate national cancer incidences. The conditions are that the proportion of deaths certificate notification (DCN) or death certificate only (DCO) was below 0.3 or 0.25, respectively; and that incidence-mortality ratio (IM ratio) was over 1.5, for both sex and all sites. In this study, we added the CIs to the estimated national cancer incidences from 1993 to 2004. Ten to fourteen cancer registries met the above conditions in each year. Since we are interested in the discrepancy in national cancer incidence varying from registry to registry used for the estimation, we prepared samples in all combinations of cancer registries as potential to estimate cancer incidences. The CIs of national cancer incidences were calculated from cancer incidences in those samples.

Results

For male, lower limits of 95% confidence interval (CI) were 6 to 10% less than the estimated incidences, and upper limits of 95% CI were also less with the similar differences for all combined cancer sites (ICD10: C00-C96). For female, lower limits of 95% CI were 7 to 9% less than the estimated incidences, and upper limits of 95% CI were 8 to 10% less than for all combined cancer sites.

Discussion

Although we successfully obtained the reasonable CIs in this study, we did not consider the data quality of registries, the difference among registries or other registries not used for the estimation. Further investigation will be needed.

**ESTIMATION OF CANCER INCIDENCE AND MORTALITY
ATTRIBUTABLE TO TOBACCO SMOKING IN KOREA**

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Background

Smoking is by far the most important single cause of cancer in developed countries. According to the updated evaluation of carcinogenic agents, International Agency for Research on Cancer (IARC) classified that tobacco smoking is a group 1 agent that has sufficient evidence for the association with cancers of the oral cavity, pharynx, esophagus, stomach, colorectum, liver, pancreas, larynx, lung, cervix, kidney, bladder, ureter, and bone marrow. The purpose of the project is to provide an evidence-based, consistent assessment of numbers of smoking-related cancer cases and deaths in Korea in the year 2007.

Methods

Exposure to active tobacco smoking was classified as current, former and non-smokers in this study. Exposure to passive smoking was considered as exposed to smoking at household (smoking spouse or other family members) and/or workplace. We assumed a latency period of approximately 20 years between smoking exposure and the cancer occurrence, hence estimated the adult smoking prevalence separately by sex, using the Korea National Health Examination Survey performed in 1989. Relative risks of smoking-related cancers were evaluated for current smokers and former smokers compared to non-smokers, from the analysis of a large-scale population-based prospective study or from performing a meta-analysis. The number of cancer incidence cases in 2007 was obtained from The Korea Central Cancer Registry and the cancer deaths were from the Korea National Statistical Office. The population attributable fraction (PAF) was calculated using the Levins' formula for multiple categories.

Results

Tobacco smoking (exposure to active and passive smoking) was responsible for 13,185 deaths of cancer among men (31% of all cancer deaths) and 1,403 deaths among women (5.71% of all cancer deaths). There were 19,734 (24%) and 1,852 (2.51%) cancer incidence cases in women attributable to smoking. In men, 67% of lung cancer and 52% of upper aerodigestive tract (oral cavity, pharynx, esophagus and larynx) cancer were attributable to tobacco smoking. Second-hand smoking was responsible for 1,108 incidence cases and 917 deaths of lung cancer (27%) among non-smoking women.

Discussion = Approximately one out of three cancer deaths were attributable to smoking in Korean men. On the contrary, only 5.71% of cancer deaths were attributable to smoking, resulted from a very low smoking prevalence in Korean women. However, it is noteworthy that the second-hand smoking was responsible for relatively high proportion of lung cancer (27%) among non-smoking women. The current study results can provide the evidence-based strategies for prioritizing the cancer prevention program in respect to smoking.

P-4-01

Withdrawal

P-4-02

CANCER PREDISPOSITION SYNDROMES IN CHILDREN

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Background

The aim of the study was to assess the prevalence of cancer predisposition syndromes among children with cancer in Moscow Region (MR), Russian Federation.

Methods

The data on patients were retrieved from the database of Childhood Population-based Cancer Registry of MR. Morphological diagnoses were stratified according to ICD-O-3, subsequently tumors were grouped according to ICCC-3. All cancer cases from 2000 till February 2010 were included. The relative risk (RR) for developing cancer was calculated by dividing the observed number of cancer cases with cancer predisposition syndromes by the expected number. The statistical analysis was performed in March 2010.

Results

35 (3,0%) children with cancer predisposition syndromes were revealed among 1173 registered patients. The following syndromes were observed: retinoblastoma predisposition - 9 (25,7 %), Down syndrome - 8 (22,9 %), neurofibromatosis type 1 - 8 (22,9 %), Nijmegen breakage syndrome (NBS) - 4 (11,4 %), 46XY gonadal dysgenesis - 2 (5,7 %), other - 4 (11,4%). Genetic syndromes were observed in patients with retinoblastoma - 31 %, germ-cell tumors - 6,8 % and soft tissue sarcomas (STS) - 4,5 %. Eight tumors were associated with Down syndrome: 4 cases of acute myeloid leukemia (AML) and 2 - acute lymphoblastic leukemia. The RR of 14,7 (95% CI 1,9 - 333,1) for leukemia and 56,6 (95% CI 9,3 - 1398,0) for AML was observed. Eight tumors were associated with neurofibromatosis: 5 - CNS tumors and 3 - STS. The RR of 20,4 (95% CI 3,2 - 446,1) for all types of cancer, 59,5 (95% CI 8,1 - 1388,6) for CNS tumors and 133,2 (95% CI 26,9 - 3480,9) for STS was observed. Four tumors were associated with NBS (2 B-cell lymphomas and 2 leukemias).

Discussion

The most prevalent cancer predisposition syndromes in MR were hereditary retinoblastoma, Down syndrome and neurofibromatosis. Early diagnostics of such syndromes in cancer patients is essential for therapy optimization and targeted screening of patient's relatives.

P-4-03

CANCER REGISTRY OF SETIF, (ALGERIA) INCIDENCE, TRENDS AND SURVIVAL 1986-2005

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Background

Cancer is becoming a major problem of public health in Algeria. It causes great suffering to patients and their families. Despite recent advances in therapy, Mortality from cancer remains high.

The cancers are often diagnosed in a late stage. Treatment and medical care are difficult and expensive. To fight efficiently against this disease and the economic repercussions, it is indispensable to dispose of a reliable and precise data.

Methods

The cancer Registry of setif was established in january 1989, in collaboration with IARC. The registry is attached to the Department of public health information and biostatistics of the service Epidemiology and Preventive Medicine.

The population of the wilaya of Setif was estimated at 1.3 million in 1998. The town is the second in importance in the country, after Algiers.

The registry uses the latest version of CANREG 4.

This study relates incidence trends and survival in Setif Cancer Registry during the period 1986-2005.

Results

Lung cancer is the first commonly site, the age-standardized rate raising; from 11.7 to 21.9 / 100.000 people for one year for males. Prostate cancer is in second position, increasing and fast trend from 2.0 in 1986 to 7.2 per 100.000 men in 2005. In both sexes, new cases of colorectal cancer are raising Bladder increases 2.2 to 8.7 per 100.000 people for one year at the man.

The incidence rates of cancers of nasopharyngeal carcinoma, stomach, lymphomas and leukemia's remained stable during these two last decades.

In woman, the incidence rate of breast cancer is raising, from 10.4 in 1986; to 19.6 in 2005. Incidence of thyroid cancer increases from 1,1 in 1986 to 4,3 in 2005. The rates are stable for the incidence lymphoma, gallbladder and, cervix.

The data of survival relative to 5 years, not exceeding 40%, according to the last study CONCORD 1990-1994 for the common cancers of the cancer registry.

Discussion

The Cancer Registry become today an indispensable tool and provide a scientific data for the development of a coherent politics of research clinic, therapeutic, and prevention, and to determine priorities of fight against cancer.

Twenty years of registration in Setif provided important information on incidence trends and survival. These are used for scientific programs and for the development of the cancer control in Algeria.

P-4-04

DEMOGRAPHIC AND ANATOMIC PREDICTORS OF DELAYED COLORECTAL CANCER (CRC) DIAGNOSIS IN CALIFORNIA, 2004-2008

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Background

Demographic characteristics are widely used to target intensified CRC screening. We sought to distinguish roles of demographic variables and bowel segments as predictors of delayed (stage II-IV) vs early (0-I) diagnosis (Dx) of colorectal *in situ* and local invasive adenocarcinoma in the California population.

Methods

Demographic variables and right (C18.0-C18.4) vs left (C18.5-C18.7 & C19.9-C20.9) bowel origin for 66,806 CRC cases diagnosed in 2004-2008 were extracted from the California Cancer Registry and analyzed by Logistic Regression as delayed vs early Dx.

Results

Of the CRC cases, 65% were non-Hispanic (NH) white, 15% Hispanic, 13% Asian/Other and 7.2% NH black. Analyses showed increased odds of delayed vs early Dx (OR, 95% confidence limits) for age <40 (2.58, 2.26-2.94), 40-49 (1.71, 1.60-1.83) and 75+ (1.05, 1.02-1.10) relative to 50-74 years. Contrast with NH whites, odds ratios for delayed vs early Dx were: 1.06, 0.99-1.13 (NH blacks); 1.08, 1.02-1.13 (Hispanics) and 1.05, 1.00-1.11 (Asian/Others). Females had higher odds of delayed CRC Dx (1.09, 1.06-1.13) than males. Lower odds ratios for delayed Dx were seen for successively higher to lowest SES quintiles (OR_{2:1}=0.98, 0.92-1.04; OR_{3:1}=0.94, 0.88-0.99; OR_{4:1}=0.90, 0.85-0.95; and OR_{5:1}=0.83, 0.78-0.88; Trend $p < 0.0001$). Origin in the right bowel showed higher odds ratios for delayed vs early Dx (1.68, 1.63-1.74). Findings were similar in a model using proximal (C18.0-C18.6) vs distal (C18.7 & C19.9-C20.9) bowel (OR=1.67, 1.61-1.73) instead of right vs left.

Discussion

Our findings identify younger and older than age 50-74 at Dx, females, Hispanics, right or proximal bowel, and lower SES as independent predictors of delayed CRC Dx. Low SES persists as a predictor of delayed Dx, independent of race/ethnicity. More than 75% of CRC (77% of delayed stage) cases were in race/ethnic groups not routinely classified as underserved. Findings for higher odds of delayed Dx in the right and proximal bowel challenge current screening practices.

P-4-05

RELATIONSHIP BETWEEN CANCER INCIDENCE AND MORTALITY AND AMBIENT ULTRAVIOLET B IRRADIANCE IN CHINA

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Background

Studies finding an inverse correlation of ambient solar irradiance with cancer mortality were the first to suggest that sun exposure and probably, therefore, vitamin D might protect against some cancers. Such correlation has been shown in Asian populations in some studies. We analyzed the correlation between mortality and incidence from a number of cancers and ambient solar ultraviolet (UV) B irradiance in China.

Methods

Cancer mortality data were obtained from the Second National Death Survey conducted in a sample of 263 counties in China from 1990 to 1992. National cancer registration data 1998- 2002 in China were used for estimation of cancer incidence. Satellite measurements of cloud adjusted ambient UVB intensity at 305 nanometres were obtained from a NASA database and GIS methods used to estimate the average daily irradiance for the 263 counties in 1990. We estimated cancer mortality rate ratios per 10 mW/(nm m²) change in UVB by fitting a negative binomial regression model with mortality as the response variable and UVB as the independent variable, adjusted for sex, age and urban or rural area.

Results

Mortality rates for all cancers and cancers of the esophagus, stomach, colon and rectum, liver, lung, breast, and bladder were inversely correlated with ambient UVB. This correlation was present in men and women and rural residents for all these cancers but not urban residents for cancers of the esophagus, colon and rectum and liver. Lung cancer mortality showed the strongest inverse correlation with an estimated 12% fall per 10 mW/(nm m²) increase in UVB irradiance even if adjusted for smoking. Only incidence rates for cancers of the esophagus, stomach, colon and rectum and cervix were inversely correlated with ambient UVB. Mortality and incidence from nasopharyngeal cancer increased with increasing UVB (respectively 27% and 12% per mW/(nm m²)). Mortality from cancer of the cervix also increased, but to a lesser extent and mortality from leukemia was not consistently correlated with UVB irradiance.

Discussion

Mortality from all cancers together and most major cancers in China was inversely associated with solar UVB. These associations were similar to those observed in a number of populations of European origin. Incidence of some cancer types had the same correlation with UVB. They suggest the possibility that vitamin D may reduce the incidence or improve the outcome of cancer in Chinese people.

P-4-06

EVALUATION OF STOMACH ENDOSCOPIC SCREENING BY SURVIVAL RATE USING REGIONAL CANCER REGISTRY DATA

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Background

In the stomach cancer screening guideline announced in 2006, X-ray screening with a proven death rate decrease effect was recommended, but endoscopic screening showed insufficient evidence. To evaluate the effectiveness of endoscopic screening, survival rates were compared for various screenings among stomach cancer incident patients.

Methods

The subjects were 1,666 people aged 40-79 years old who were diagnosed with stomach cancer from April 1, 2000 to December 31, 2007. Data were extracted from Tottori Prefecture regional cancer registry in Japan. The start of the observation period was set as the day of stomach cancer diagnosis, and the end was the day of death or December 31, 2007. The subjects were divided into three groups of endoscopic screening, X-ray screening and non-consultation with screening less than 1 year before the day of stomach cancer diagnosis. The Kaplan-Meier method and Cox regression analysis were used for statistical analysis.

Results

The cumulative survival rate was highest for endoscopic screening, followed by X-ray screening, and lowest for non-consultation. This difference was significant by the log rank test ($p < 0.001$). The death hazard ratio of X-ray screening and non-consultation to endoscopic screening was 1.626 ($p < 0.125$) and 5.254 ($p < 0.001$), respectively.

Discussion

Endoscopic screening showed a tendency to be significantly more effective for preventing death than non-consultation, but the influence of bias could not be excluded. By comparing endoscopic screening and X-ray screening with little influence of bias, endoscopic screening showed a tendency toward a higher survival rate and a lower death hazard ratio, but they were not significantly different. However, endoscopic screening was suggested to be effective because the result was as effective as X-ray screening, with a proven death rate decrease effect.

P-4-07

OCCUPATIONAL RISK FACTORS FOR OCCURENCE TO LUNG CANCER

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Background

Certain occupations are proven to be risk factors for lung cancer as a result of exposure to carcinogen in working environment. This population based case-control study was designed to analyze occupational risk factors for lung cancer in Lampang Provinceto analyze occupational risk factors for lung cancer in Lampang Province.

Methods

The study sample consisted of 220 lung cancer cases and 440 non cancer cases. These two groups were similar in terms of gender, age (± 2 years) and residential area within the same village of Lampang Province. Data collection was undertaken using an interview form. Data analysis was performed using unconditional logistic regression.

Results

The main results after adjusted for smoking illustrated that statistically significant lung cancer risks were observed among employees in service industry (OR= 2.5, 95% CI = 1.1-5.6, $p < .05$) and cleaning workers (OR=3.1, 95% CI=1.1-8.7, $p < .05$). Hazard exposures in working environments found to be significant risks were as follows: exposure to smoke from plant material burning (OR=1.7, 95% CI=1.1-2.5, $p < .05$); paint/solvent (OR=1.8, 95% CI=1.1-2.9, $p < .05$); agricultural cultivation dust (OR=1.8, 95% CI=1.2-2.6, $p < .05$) and tobacco smoke in the workplace (OR=2.2, 95% CI=1.5-3.4, $p < .001$). Nonetheless using personal protective equipment was found to reduce risk for lung cancer significantly ($p < .001$).

Discussion

The results of the study indicate that occupational and environmental health nurses and other related health personnel should pay attention to planning for preventing and controlling lung cancer among high risk workers. In particular, they should focus on encouraging workers to use personal protective equipment while working. Raising awareness along with information dissemination to the public in term of occupational lung cancer should also be addressed.

P-4-08

Withdrawal

P-4-09

RISK OF SECOND MALIGNANT NEOPLASM AMONG CHILDHOOD CANCER SURVIVORS IN OSAKA, JAPAN: THE OSAKA CANCER REGISTRY

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Background

Whereas survival for childhood cancer was improved in past decades, some of survivors from childhood cancer have suffered from second and subsequent malignant neoplasms (SMNs). Evidence was limited in risk of SMNs among Asian childhood cancer survivors.

Methods

A total of 7,992 children (4,432 males and 3,560 females) with primary childhood neoplasm (aged <15 years old) was registered at the Osaka Cancer Registry, Japan, from 1963 to 2004, and followed during childhood (<15 years old) until 2004. SMNs was defined by IACR's rule and restricted to neoplasm. Risk of SMN among primary cancer survivors was evaluated by standardized incidence ratios (SIRs) in comparison with the risk of primary malignant neoplasm among general population in Osaka. Cox proportional hazard model was used to assess hazard ratio (HR) of risk predictors for development of SMNs.

Results

40 SMNs (30 males and 10 females) were identified (SIR=8.44) for a median of 1 year follow-ups. Survivors with retinoblastoma, hepatic tumors, soft tissue tumors, and epithelial tumors as primary childhood cancers had higher SIR. The respective SIR was 21.79 (4 cases), 27.89 (4 cases), 15.56 (4 cases), and 17.87 (2 cases). Male (HR;2.4), age of the primary childhood cancer (ages: 0 versus 10-14 years, HR;2.0), retinoblastoma (HR:6.9 compared with leukemia), hepatic tumors (HR:8.9), soft tissue sarcoma (HR:4.9), and epithelial tumors (HR:7.7) as primary childhood cancer was independently associated with risk of SMNs.

Discussion

Soft tissue tumor as primary childhood cancer was a significant predictor of SMN in the present study as reported from Germany. However, in Germany lymphoma and central nervous system tumors were also risk predictors of SMNs. Also, male were more likely to develop SMNs in Japan, as so were female in the United States. Backgrounds for the cross-cultural differences need to be investigated.

P-4-10

DIFFERENCES IN CANCER INCIDENCE IN SOME ARGENTINE PROVINCES: PRELIMINAR SURVEY

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Background

Argentina is a very big country with nearly 38,000,000 inhabitants. Half of the population lives in rich Provinces like Buenos Aires, Santa Fe, Cordoba and Mendoza. Many of the other provinces are poor with less access to health care and prevention, like Chaco, La Pampa, Rio Negro and Entre Rios. They also have an important proportion of aboriginal populations. Differences among provinces are more evident as you get farther away from the Capital areas of each province. Knowledge of the different patterns of cancer in the different regions will help to develop rational Cancer Control Programs.

In the last 5 years, some Cancer Registries have improved their data quality but as the 2003-2007 period is not completed yet, we are only able to present a preliminar analysis.

Methods

All the CRs research actively following IARC rules.

For this presentation, we have only considered data of Rio Negro (RN, 550,000 inhabitants), Entre Rios (ER, 1,250,000); both 2001-2005, Chaco (Ch) (980,000) and Tierra del Fuego (TF) (101,000) (2003-2007) and our partial data of the same period in Bahia Blanca (BB) (300,000) (South of Buenos Aires Province).

Results

Among men, the highest position is held by prostate in Bahia Blanca, Rio Negro (asr 37,3) and Entre Rios (40,1) followed by lung cancer in RN (26,8) and ER (35,9) and by colon-rectum in BB.

In Ch and TF the first position is for lung cancer (asr 37,4 and 46,9) followed by prostate in Ch (23,4) and by colon-rect in TF (33,9). Among women, the first place is for breast cancer in all the provinces (RN 57,6, ER 60,4, Ch 49, TF 67,4 and in BB represents 38%) followed by colon-rect (RN 17,5, ER 20, TF 19,1) except Ch where cervix is the second (asr 29,7) in contrast with RN 17,3, ER 13,7, TF 16,5 and BB (7,3% : similar proportion than our previous data: asr 16).

Discussion

According to these preliminar data, the main differences we have found are in cervix cancer, which in Ch (the poorest among the considered provinces) has an asr 29,7; lung cancer is in the first place in the male population of the poorer provinces (Ch, TF); whereas, such type of cancer is in the 3rd position in Bahia Blanca.

These differences (and others not mentioned here) should be taken into account in the future to improve Cervical Cancer Prevention and Tobacco Control Programs in these provinces.

P-4-11

THE METABOLIC SYNDROME AND MORTALITY FROM CANCER AND ALL-CAUSES IN JAPAN

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Background

To clarify the relationship between the mortality from cancer and all-causes and metabolic syndrome in a general Japanese population.

Methods

Design and Methods: A retrospective cohort study was conducted among 8,329 male and 15,386 female subjects between 1992 and 2000. The analysis used 5 definitions of metabolic syndrome and its components. The information on mortality from cancer and all-causes was obtained from the population-based cancer registry. A Cox proportional hazard model was adapted for the statistical analyses. The average follow-up period was 9.2 years.

Results

The National Cholesterol Education Program Adult Treatment Panel III 2001 criteria of metabolic syndrome were superior to the 4 other proposed criteria for predicting the all-causes mortality. The hazard ratio of metabolic syndrome for all-causes mortality was 1.49 (95% confidence interval (CI) 1.27-1.75) for male, and 1.37 (CI 1.15-1.64) for female. The hazard ratio for cancer mortality was 1.21 (CI 1.05-1.40) for male, and 1.09 (CI 0.93-1.28) for female. When the analysis was limited to elderly aged 65 years old or older, the ratio was 1.33 (CI 1.19-1.49) for male, and 1.05 (CI 0.92-1.19) for female. The metabolic syndrome was a significant predictor of premature death (under 65 years of age) for male (hazard ratio 1.24 (CI 1.09-1.43)). In the statistical model, which included all components of the metabolic syndrome and the metabolic syndrome (present or absent), high blood glucose and high blood pressure were significant predictors for all-causes mortality for both sexes rather than metabolic syndrome.

Discussion

Metabolic syndrome may play an important role in the all-causes mortality for both sexes and cancer death for male. However, this is very likely that the effect resulted from components of the metabolic syndrome, such as high blood glucose and high blood pressure.

P-4-12

RISING INCIDENCE TRENDS AND ETHNIC PATTERNS OF BREAST CANCER AMONG ASIAN-AMERICAN WOMEN

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Background

Asian-American women in general display a much lower breast cancer incidence rate as compared to their non-Hispanic (NH) white counterparts. However, this masks an important heterogeneity in breast cancer risk among Asian women living in the US.

Methods

Using data from the Los Angeles Cancer Surveillance Program for 1972-2007, we analyzed the age-adjusted and age-specific incidence rates of invasive breast cancer in Chinese, Japanese, Filipina, Korean, and NH white women in Los Angeles County, California.

Results

Increasing incidence trends of invasive breast cancer were found in all racial/ethnic groups throughout the 1980s and 1990s. The increases in Japanese and Filipinas were more substantial than those in Chinese and Koreans, fast approaching the risk level of NH whites. In early 2000s, a declining incidence trend was observed for NH whites and Japanese, while the upward trends continued for Filipinas, Chinese, and Korean. By 2007, Filipinas had the highest breast cancer risk among Asian-Americans, surpassing Japanese. Japanese and Filipinas born in 1930s and later displayed a risk level much closer to that of NH whites than their Chinese and Korean counterparts.

Discussion

Risk for invasive breast cancer varies markedly by ethnic group among Asian-American women. The variations underline the significance of environmental determinants on the development of breast cancer. Targeted efforts against breast cancer are needed for Asian-Americans.

P-4-13

COMPARISON BETWEEN THE CANCER INCIDENCE IN NIGHTSHIFT WORKERS AND DAY WORKERS, 1998-2007

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Background

Firefighters are intermittently exposed to many toxic combustion products and almost work nightshift for nature of job. IARC classified occupational exposure as a firefighter as group 2B for intermittent exposure to carcinogens, and shift-work as group 2A based on several epidemiologic studies in human and experimental animal studies, for increased risk of breast cancer due to disruption of circadian rhythm. Exposure to light at night suppresses the physiologic production of melatonin. Melatonin shows potential oncostatic action in endometrial, ovarian, prostate and intestinal cancer in previous several studies. So we compare the cancer incidence between firefighters who work nightshift and production workers in a shipyard who don't work at night, to investigate the effect of nightshift.

Methods

The participants consisted of 36,420 all Korean male firefighters as nightshift workers and 21,822 production male workers in a shipyard. We restricted the participants those who worked 5 years or more and 30-69 years-old to consider the latent period for occupational exposure, and excluded those who occurred cancer before 1998. We followed up from 1998 through 2007.

Results

Eligible participants were 23,190 firefighters and 16,901 production workers with observed person-years of 229,426 and 159,387. The mean ages were 43.9 (SD: 9.9) and 49.9 years (SD: 9.9) in firefighters and production workers. The mean durations of employment were 15.4 (SD: 6.7) and 21.0 years (SD: 5.8) in firefighters and production workers. The total incident cases of cancer were 377 among firefighters and 450 among the production workers, and the ASR per 100,000 person-years were 227.1 and 241.9 for firefighters and production workers. Compared with production workers, the standardized cancer incidence rate ratio (SRR) of firefighters for all sites was 0.94 (95% CI: 0.80, 1.10). The SRRs for specific sites were stomach 0.60 (0.44, 0.82), intestinal 1.48 (1.04, 2.10), prostate 2.50 (0.79, 7.95; 90% CI: 0.95, 6.58), bladder 1.82 (0.79, 7.95; 0.90, 3.69), and non-Hodgkin lymphoma 5.93 (1.68, 20.94).

Discussion

Firefighter is risk occupation to prostate cancer without obvious exposure. Melatonin shows growth inhibitory activity on human androgen-independent prostate cancer cell and inhibition of androgen sensitive prostate cancer cell proliferation in several studies. And melatonin regulates the secretion of gonadal hormones by influencing the HPG axis. Intestinal cancer was higher in firefighters. The former and current smoker rates and physical activity were not different. Melatonin protects the intestinal cancer incidence. So, there is limitation of no all adjustment for confounding factors, but in this study we show that the prostate and intestinal cancers were higher incidence in nightshift workers than day workers.

P-4-14

RETROSPECTIVE COHORT STUDY OF IMPAIRED GLUCOSE TOLERANCE AND THE INCIDENCE OF PROSTATE CANCER IN A RURAL PREFECTURE

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Background

It has been reported that diabetes is associated with all site cancer-, pancreatic cancer-, and kidney cancer-related incidence and mortality. However, its relationship with the incidence of prostate cancer remains to be clarified. In this study, we investigated the relationship between a history of impaired glucose tolerance and the incidence of cancer through record linkage across datasets obtained from a population-based cancer registry and health examination records in Tottori Prefecture, Japan. In particular, we analyzed the risk of prostate cancer.

Methods

The subjects were 12,598 males and 23,623 females who underwent a health examination between January 1992 and March 2000, with an age of 40 years or older at the initial health examination. We examined the relationship between impaired glucose tolerance and the incidence of cancer by linking their records with the Tottori Prefecture Cancer Registration Data. Using Cox's proportional hazard model, the hazard ratio was calculated to examine the risk of cancer and values were adjusted with the age at health examination, frequency of examination, BMI, smoking, and alcohol consumption. The average follow-up period was 10.9 years.

Results

The rates of subjects with impaired glucose tolerance in males and females were 21.2 and 11.5%, respectively. The rates of cancer in males and females showing normal blood glucose levels were 13.1 and 5.8%, respectively. Those in males and females with impaired glucose tolerance were 14.0 and 8.9%, respectively, higher than the above values. The adjusted hazard ratio (AHR) of prostate cancer related to impaired glucose tolerance was 1.65 (95% confidence interval: 1.15-2.36). Concerning other sites, the AHRs of pancreatic cancer and malignant lymphoma in males, as well as those of all-site, colon, liver, gallbladder/bile duct, and uterine cancers in females, were 2.12, 2.97, 1.48, 2.04, 3.35, 2.51, and 2.78, respectively, being significantly higher than those of other cancers.

Discussion

The results of this cohort study suggest that impaired glucose tolerance increases the risk of prostate cancer. In the future, its association with the severity of impaired glucose tolerance, duration of disease, and grade at the onset of prostate cancer should be investigated.

**VERY HIGH INCIDENCE OF CANCER STOMACH
IN MIZORAM, INDIA- A POPULATION BASED
CANCER REGISTRY DATA**

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Background

Mizoram, located in the NE India, borders Myanmar on the East. The people are ethnically of Mongolian race, unlike most other Indian states. A population based cancer registry (PBCR) covering the entire Mizoram State was commenced in 2003 at Aizawl under the National Cancer Registry Programme (NCRP) as a sequel to the WHO project on 'Development of an Atlas of Cancer in India' which showed high incidence of cancer - overall, stomach, lungs etc. in Mizoram. It has a population of 888,573 (2001 census).

Methods

Mizoram PBCR, an associate member of IACR, actively collects cancer cases from 39 sources which includes death registration offices. Data from outside the state is also collected through NCRP network of cancer registries. A special software designed by NCRP is used for the purpose and duplicity and consistency checks are done at the registry and then at NCRP headquarters in Bangalore.

Results

A 4 year cancer data during 2003-2006 is presented here. A total of 4414 cancer cases (2477 males, 1937 females) were registered with an overall ASR(W) of 192.1 and 154.9 respectively. Of these, stomach cancer accounted for 24.1 % among males and 13.9 % among females. The ASR(W) of stomach cancer in Aizawl district (males: 57.5; females: 30.8) and Mizoram state (males: 48.9; females: 24.4) are by far the highest reported in India and comparable with those of the highest in the world. Broad histologic types consist predominantly of adenocarcinomas (65.5 % in males, 56.8 % in females) and non microscopic diagnosis comprises of 25.5 % in males and 30.6 % in females.

Discussion

Such high incidence of stomach cancer is not seen in any of the well established cancer registries in India. Dietary factors and high tobacco consumption appears to play a part. A comprehensive screening for early detection as done in Japan and more research on risk factors are needed.

P-4-16

EVALUATION OF THE ASSOCIATION BETWEEN BLADDER CANCER RISK AND INDUSTRY TYPE IN IZMIR, TURKEY

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Background

The purpose of our study is to identify the association between the industry field and bladder cancer risk among male.

Methods

A population based case-control study was conducted. Cases (n=316) which have coverage by Social Security Institute were taken among all Izmir resident male bladder cancers cases (n=1746) who diagnosed between 1993-1998 from the ICR (Izmir Cancer Registry) database. Controls (n=319) were selected from the records of Department of Retirement of Social Insurance Institute of Ministry of Labor and Social Security (SIIMLSS). Occupational exposures were estimated by using insurance premiums records and archives of SIIMLSS.

Results

Among male, an increased risk of bladder cancer was found for petroleum-chemistry and rubber industry (OR = 2.58, 95% CI 1.4 - 4.7), leather industry (OR = 3.81, 95% CI 1.05 - 13.8). An increased risk for bladder cancer was found the workers in the flour production (OR = 7.08, 95% CI 1.6 - 31.6), animal feet production (OR = 4.05, 95% CI 1.3 - 12.3), chemical raw material manufacturing (OR = 3.14, 95% CI 1.1 - 8.8), rubber and plastic manufacturing (OR = 3.37, 95% CI 1.1 - 10.43), metal raw material manufacturing (OR = 4.45, 95% CI 1.5 - 15.9), iron and steel manufacturing (OR = 6.79, 95% CI 1.5 - 30.3). The highest risk was found for workers who worked over 5 years in petroleum, chemistry and rubber industry (OR = 3.56, 95% CI 1.5 - 9.8).

Discussion

In Turkey, epidemiological studies on industrial exposures and cancer risk have been very limited. Our study provides an important contribution to this field. Despite of the limitations in our study, i.e. lack of information on smoking status, our findings indicate very strong associations between bladder cancer risk and working in certain industrial fields.

P-4-17

GEOGRAPHICAL PATTERNS OF STOMACH CANCER INCIDENCE IN ZARAGOZA (SPAIN): SOCIOECONOMIC AND RURAL FACTORS

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Background

Geographic variations in the incidence of gastric cancer have been reported throughout the world, but also at national and regional level. The objective of this study was to identify geographical patterns of gastric cancer incidence in Zaragoza during the period 1993-2002 and their association with socioeconomic (SES) and rural factors.

Methods

Incidence data of stomach cancer (excluding lymphomas) diagnosed during the period 1993-2002 among residents in Zaragoza were extracted from the population-based Zaragoza Cancer Registry. SES and rural indicators were obtained from 1991 and 2001 census. The geographical analysis unit was the census tract (CT). Synthetic deprivation (used in MEDEA Spanish project) and rural (proposed by Ocaña) indexes were elaborated applying principal component analysis (PCA). Standardized Incidence Ratios (SIR) were calculated using incidence rates of Spain (population-based Cancer Registry data published in Cancer Incidence in V Continent, volume IX). The SIRs were adjusted by a Bayesian GLMM model that accounts for a spatial and non-spatial heterogeneity. The indexes were included in the model discretized into quartiles.

Results

From 1993 to 2002, 578 cases of gastric cancer were registered, yielding an incidence rate in male of 28.6 per 100,000 male-year and 18.8 in female. CT with higher risk were located in the North and East of the province and in the capital (Zaragoza city) peripheral areas. Significant association was found between deprived index and gastric cancer incidence in Zaragoza city. In females, a positive trend was observed for rural index but it was only statistically significant for the most rural quartile (2.49. 95% CI 1.07-4.92).

Discussion

These results suggest that the deprived index used could be explaining, at least partially, the geographical variations of gastric cancer incidence, but only in Zaragoza city. Rural index could explain, at least partially, in women, geographical differences of stomach cancer incidence. It is still necessary to develop a deprivation index suitable for rural areas and gender sensible.

P-4-18

ASSOCIATION OF ALCOHOL INTAKE WITH THE RISK OF MALIGNANT LYMPHOMA AND PLASMA CELL MYELOMA IN JAPANESE: A POPULATION-BASED COHORT STUDY

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Background

Few studies have evaluated the association between alcohol intake and the risk of the lymphoid neoplasms malignant lymphoma (ML) and plasma cell myeloma (PCM) among Asian populations.

Methods

We conducted a large-scale population-based cohort study of 95,520 Japanese subjects (45,453 men and 50,067 women; age 40-69 years at baseline) with an average 13 years of follow-up, during which a total of 257 cases of ML and 89 of PCM were identified. Hazard ratios and 95% confidence intervals were estimated using a Cox regression model adjusted for potential confounders.

Results

Alcohol intake of equal or more than 300 g/week was associated with a significantly lower risk of lymphoid neoplasms (hazard ratio, 0.60; 95% confidence interval, 0.37-0.98) than occasional drinking at a frequency of <1 day/month, and the trend for alcohol consumption was significant ($P = 0.028$). A similar trend was observed for the subcategories of ML, PCM, and non-Hodgkin lymphoma (NHL), albeit that the results were significant only for alcohol consumption at equal or more than 300 g/week in NHL patients, probably due to the small number of subjects in each category.

Discussion

In conclusion, we found that alcohol had an inverse association with the risk of lymphoid neoplasms, particularly the risk of NHL, Q3 among a Japanese population.

**SECULAR TRENDS IN THE INCIDENCE OF INTRAHEPATIC
CHOLANGIOCARCINOMA IN ASIAN COUNTRIES**

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Background

An increase in the incidence of intrahepatic cholangiocarcinoma was observed in developed Western countries. The risk factors for intrahepatic cholangiocarcinoma have geographic distributions. However, there are few studies evaluating the secular trends in the incidence of intrahepatic cholangiocarcinoma in Asian countries. We analyzed the trends in the incidence of intrahepatic cholangiocarcinoma in Asian countries to postulate the different possible mechanisms by using the cancer database from International Association of Cancer Registries and from Taiwan National Cancer Registry Database.

Methods

Gender specific age-standardized rates of hepatocellular carcinoma, intrahepatic cholangiocarcinoma, unspecific carcinoma, other liver tumors, and gall bladder and extrahepatic cholangiocarcinoma are obtained in Asian countries, including India, Israel, Japan, Kuwait, Philippine, Singapore, Taiwan and Thailand, to explore the secular trends among these tumors from 1983 to 2002. Furthermore, incidence data of intrahepatic cholangiocarcinoma from Taiwan were analyzed by age-period-cohort models to format a relevant hypothesis of the causes of the trends.

Results

An obvious increase in trends of the incidence of intrahepatic cholangiocarcinoma was observed in India, Japan, Philippine, Taiwan and Thailand in both genders. Thailand has the highest age-standardized rates of intrahepatic cholangiocarcinoma (3.18 per 100,000 population of men between 1998 and 2002, and 1.8 per 100,000 population between 1998 and 2002). Taiwan has the highest 5-year average rise in age-standardized rate with more than five times rise from 1983 to 2002 in both genders.

Discussion

Asian countries have divergent trends in the incidence of intrahepatic cholangiocarcinoma. The major risk factors for intrahepatic cholangiocarcinoma could also be different among countries. Further research should be carried on to confirm the possible causes for the secular trends, including environmental factors, fluke infection, viral hepatitis or other factors.

P-4-20

RISK ASSESSMENT OF ELECTROMAGNETIC FIELD ON LYMPHOMA DEVELOPMENT USING POPULATION-BASED CANCER REGISTRY DATA

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Background

In 1979 Wertheimer reported low-frequency electromagnetic field (LF-EMF) as a risk factor of child leukemia, but following studies have not reached to the consensus. We estimate the risk of LF-EMF on lymphoma using analysis software based on geographical information system (GIS) and population-based cancer registry data.

Methods

The addresses of 178 lymphoma cases from registry data (1975-2004) in one city were marked precisely on the city map. The observed case numbers of 25m-, 50m- and 150m-areas from power cables were counted by GIS software. Each expected case numbers were calculated based on the incidence of 500m-area and adjusted by population density. The risk value was estimated by the observed case to expected case (O/E) ratio and was tested using Poisson test.

Results

88 cases were located in 500m-area of power cables. The O/E ratios (Poisson test p-value) of 25m-, 50m- and 150m-area were 2.67 (0.03*), 1.55 (0.13) and 1.02(0.49).

Discussion

The O/E ratio for 25m-area of power cables showed significant risk, but whole amount of cases were not enough. More wide-area research is necessary to assess the validity of our method and the risk of LF-EMF on lymphoma.

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