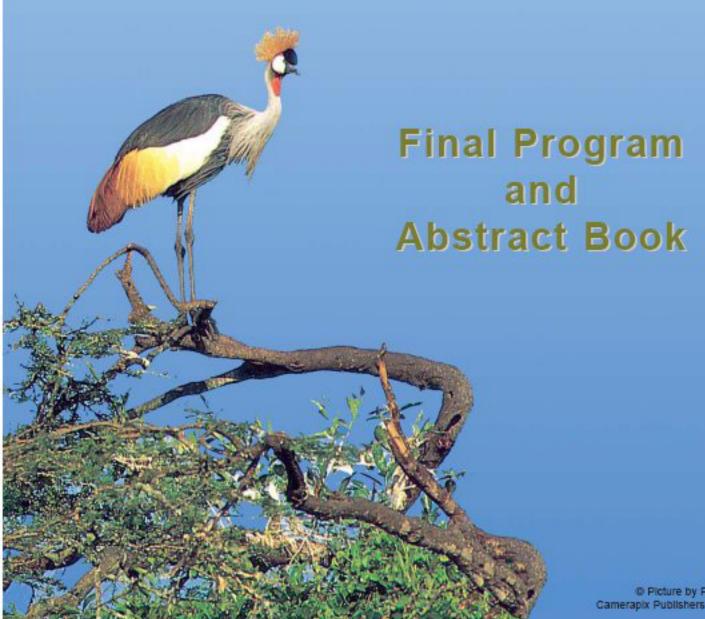# IACR2005

27th Annual Meeting of the International Association of Cancer Registries

Entebbe, Uganda, 13-15 September 2005

Theme: Cancer in low-resource populations

Final Program and Abstract Book

27th Annual Meeting
of the
International Association of Cancer Registries

IACR2005

Theme: Cancer in low-resource populations

Final Program and Abstracts

Entebbe, Uganda
13-15 September 2005

IACR2005
Entebbe, Uganda, 13-15 September
Conference Programme

Monday, 12th September 2005	

8.30 - 9.00	Executive Board registration
9.00 - 17.00	IACR Executive Board Meeting *Venue: Conference Room, IBBH*
8.30 - 17.45	Registration and setting-up of posters *Venue: Pearl Halls, IBBH*
18.00	Opening ceremony and welcome cocktail *Venue: IBBH*

Tuesday, 13th September 2005	

8.00 - 8.30		Registration and setting-up of posters *Venue: Victoria Hall, IBBH*
SESSION 1:		**Theme: AIDS and Cancer** *Chairman:* C. Rabkin *Co-chairman:* H. Wabinga
8.30 - 8.45	1.1	*Keynote:* C. Rabkin: HIV and cancer in low-resource populations
8.45 - 9.10	1.2	*S. Mbulaiteye:* Epidemiology of AIDS-related malignancies
9.10 - 9.35	1.3	*S. Diop:* Malignant hemopathies in Senegal: relation with HBV, HCV, HIV and HTLV
9.35 - 10.00	1.4	*S. Remick:* Capacity building for the clinical investigation of AIDS malignancy in East Africa
10.00 - 10.20	1.5	*F. Sitas :* The usefulness of case-control studies in unravelling associations between infection and cancer
10.20 - 11.15		***Coffee break - poster viewing***
11.15 - 11.30	1.6	*J. Galcerán:* Epidemiology of lymphomas in peoples with AIDS between 1981-2001 in Catalonia, Spain
11.30 - 11.45	1.7	*J. Lubega:* Endemic Burkitt's Lymphoma is not associated with HIV infection: what is the carcinogenesis of the tumour?
11.45 - 12.00	1.8	*I.O. Ekanem:* Emerging pattern of ocular and periocular lesions in HIV patients in Calabar: A histopathological study
12.00 - 12.15	1.9	*C. Banura:* Clinical presentation of epidemic and endemic Kaposi's Sarcoma in Ugandan children
12.15 - 12.30	1.10	*G. Nakitare:* Human Papilloma Virus in uterine cervix of HIV-positive and HIV-negative women at a health centre in Nairobi, Kenya
12.30 - 13.30		***Lunch - poster viewing***

SESSION 2:   **Theme: Cervix Cancer**
Chairman: F. Wabwire-Mangen
Co-chairman: D.M. Parkin

13.30 - 14.00   2.1   *Keynote:* Dr Namory Keita: Cervix cancer control in Africa and other developing countries

14.00 - 14.30   2.2   *R. Sankaranarayanan:* A perspective on control of cervical cancer in low and medium resource countries

14.30 - 14.45   2.3   *M.P. Curado:* Incidence of cervix cancer in Goiânia: A descriptive analysis, 1988-2002

14.45 - 15.00   2.4   *M. van der Aa:* Cervical cancer screening versus 'Medical Indication'

15.00 - 15.45   ***Coffee break - poster viewing***

15.45 - 16.00   2.5   *A. B. Moscicki:* Biomarkers for cervical cancer screening in developing countries

16.00 - 16.15   2.6   *T. Mutyaba:* Knowledge, attitudes and practices on cervical cancer screening among medical workers of Mulago Hospital

16.15 - 16.30   2.7   *L. Yang:* Cervical cancer in China

16.30 - 16.45   2.8   *D. Hammouda:* Cervical carcinoma in Algeria: Human Papillomavirus and lifestyle risk factors

16.45 - 17.00   2.9   *R. Schmauz:* Multiple infections in cases of cervical cancer in tropical Africa - an update

17.00 - 17.15   2.10   *T. Mutyaba:* Will women come for cervical cancer screening? Factors influencing uptake of reproductive health services in Uganda

17.15 - 17.30   2.11   *D. Karanja:* Cervical cytology in HIV-positive and HIV-negative women seen at a health centre in Nairobi, Kenya

19.30   Gala dinner
Venue: Poolside/Imperial Gardens (IBBH)

Wednesday, 14th September 2005

SESSION 3:   **Theme: Infection and Cancer**
Chairman: R. Owor
Co-chairman: S.L. Whelan

8.30 - 9.00   3.1   *Keynote:* Dr Michael Kew: Infections and cancer

9.00 - 9.15   3.2   *H. Tanaka:* Prospective study on the risk of hepatocellular carcinoma among Hepatitis B virus-positive blood donors

9.15 - 9.30   3.3   *M. Schaapveld:* The effect of Epstein Barr virus on survival in Hodgkin lymphoma: a population-based study

9.30 - 9.45   3.4   *N. Mutalima:* Epidemiological studies of infections in childhood cancer: new research in Malawi and Zambia

9.45 - 10.00	3.5	*R. Rochford:* Geographic distribution of endemic Burkitt's lymphoma in Kenya: evidence of spatial clustering
10.00 - 10.15	3.6	*E. Weiderpass-Vainio:* Papillomavirus infection in rural women in southern India
10.15 - 10.30	3.7	*H. Wabinga:* Multiple primary cancers in Kampala Cancer Registry

10.30 - 11.00   ***Coffee break - poster viewing***

SESSION 4:   **Theme: Cancer Control in Africa**
Chairman: A. Filipe
Co-chairman: M. Koulibaly

11.00 - 11.30	4.1	*Keynote:* Dr Twalib Ngoma: The challenges confronting cancer control in sub-Saharan Africa
11.30 - 11.45	4.2	*N. Eldin Elwali:* Risk factors for cancer in Sudan
11.45 - 12.00	4.3	*C. Dzamalala:* Registration of cancer as a tool in improving care for haematology oncology patients in Malawi
12.00 - 12.15	4.4	*A. Mohamedani:* The prevention of cancer through community-based interventions (CBIS) in low-resource populations in Gezira State, Central Sudan
12.15 - 12.30	4.5	*M. Koulibaly:* Health Information System: a tool to monitor cervical cancer screening programmes

12.30 - 13.30   ***Lunch***

SESSION 5:   **Theme: Prostate Cancer**
Chairman: T. Hakulinen
Co-chairman: E. Katongole-Mbidde

13.30 - 14.00	5.1	*Keynote:* Dr Graham Giles: Prostate cancer: priorities and praxis
14.00 - 14.15	5.2	*M. Dirx:* Trends in incidence and mortality of prostate cancer in the Netherlands, 1989-2002
14.15 - 14.30	5.3	*R. Mezyk:* Computer-aided decision support system for recognition of prostatic carcinoma
14.30 - 14.45	5.4	*A. Gondos:* Calculating age-adjusted cancer survival estimates when age-specific data are sparse: a comparison and evaluation of various methods
14.45 - 15.00	5.5	*J. Galcerán:* NOTI2001: A new and valid computer programme to capture and to manage data in Tarragona Cancer Registry

15.00 - 16.00   ***Tea break - poster viewing***

16.00 - 17.45   Special poster presentation
Theme: Cancer Registration in Africa

19.30   A taste of Ugandan Night Life
Venue: Lido Beach Resort, Entebbe

Thursday, 15th September 2005

SESSION 6:		**Theme: Palliative care**
		Chairman: M.P. Curado
		Co-chairman: L. Mpanga

8.30 - 9.00   6.1   *Keynote:* Dr Anne Merriman: Palliative care for the cancer patient in Africa

9.00 - 9.15   6.2   *S. Siesling:* The use of breast-conserving surgery and radiotherapy in the Netherlands in the period 1990-2001

9.15 - 9.30   6.3   *M. Barberis:* Realization of a point-of-care network for blood testing in cancer monitoring

9.30 - 9.45   6.4   *R. Mariani-Costantini:* BRCA1 and BRCA2 germline mutations in early onset and male breast cancer patients from Central Sudan

9.45 - 10.00   6.5   *R. Mariani-Costantini:* Pathologic characteristics of breast cancer in Sudan: comparison between a Sudanese and an Italian breast cancer series

10.00 - 10.15   6.6   *R. Rochford:* Influence of family environment on incidence of endemic Burkitt's lymphoma: a population-based case-control study

10.15 - 10.30   6.7   *V. Zadnik:* The influence of risk factors on the geographical variation of stomach cancer incidence rates in Slovenia

10.30 - 11.00   ***Coffee break - poster viewing***

11.00 - 12.00   IACR Business Meeting

12.00 - 12.30   IACR2005 Closing Ceremony, poster presentations and prizes

12.30 - 14.00   ***Lunch***

14.00 - 17.15   **Post-conference Workshop**

Theme: Opportunities for international collaborative research on AIDS-related malignancy

Chairman: C. Rabkin

Discussants: Andrew Grulich
Joe Harford
Edward Mbidde
Rob Newton
Max Parkin
Charles Rabkin
Chris Williams

Oral Presentations

IACR2005

HIV AND CANCER IN LOW-RESOURCE POPULATIONS

Charles S. Rabkin, M.D., M.Sc.

Viral Epidemiology Branch, National Cancer Institute, Bethesda, MD 20852 USA

HIV infection rates in many Aftrican countries may exceed 25-33% of the adult population. In addition to infectious complications, AIDS-related malignancy is emerging as a public health problem in its own right. The spectrum of associated cancers is distinctive, with somewhat less non-Hodgkin lymphoma and more conjunctival cancer than observed in western populations. In addition, risks of cancer and other AIDS complications may be reduced by highly active anti-retroviral therapy (HAART), but these lifesaving drugs are not yet widely available in lower-resource settings. Better strategies are needed to assess HIV's impact on cancer incidence and mortality, as a first step towards controlling this new cause of cancer. As an achievable, short-term collaboration to be catalyzed by this meeting, the IACR should consider analyzing and reporting the incidence on five continents of AIDS-associated cancer.

EPIDEMIOLOGY OF AIDS-RELATED MALIGNANCIES

Sam M. Mbulaiteye

Division of Cancer Epidemiology and Genetics, National Cancer Institute, NIH, DHHS

The human immunodeficiency virus (HIV) infection epidemic, which affects approximately 40 million people worldwide and 25 million in sub-Saharan Africa, provides a rare opportunity to study the relationship between cancer, infection, and immunosuppression. Three decades since its onset, HIV infection is strongly associated with Kaposi's sarcoma, non-Hodgkin's lymphoma and weakly associated with cervical cancer, which are designated AIDS-defining. A few other cancers, including Hodgkin lymphoma, cervical carcinoma in situ (CIS), other anogenital neoplasms (invasive cancer and CIS), and conjunctival squamous cell carcinoma have been variously associated with HIV infection. HIV-associated cancers have been associated with viral etiology, and their risks tend to increase with worsening immunosuppression, however, not all virally associated cancers, including cancers of the liver, nasopharynx, and penis, are associated with HIV infection. The risks of the most common malignancies in the general population: lung, breast, colon/rectum, stomach, liver, and prostate cancer, do not appear to be increased with HIV infection. The introduction of immune restoring highly active anti-retroviral therapy (HAART) in Western countries has resulted in decreased incidence and mortality of HIV-associated cancers, but less than 5% of AIDS patients in sub-Saharan Africa are receiving HAART. New associations or manifestations of cancer with HIV may become apparent as life extending HAART becomes widely available and HIV-infected persons liver longer with varying reconstitution of immune competence.

MALIGNANT HEMOPATHIES IN SENEGAL: RELATION WITH HBV, HCV, HIV AND HTLV

S. Diop

CAPACITY BUILDING FOR THE CLINICAL INVESTIGATION OF AIDS MALIGNANCY IN EAST AFRICA

[1,2]Orem J, [2,3]Mwanda WO, [1,2]Banura C, [1,2]Katongole-Mbidde E, [2,4]Johnson JL, [5]Ayers L, [2,6]Ghannoum M, [2,7,8]Fu P, [9]Feigal EG, [9]Black J, [2,4,10]Whalen C, [2,4]Lederman M, and [2,4], [8]Remick SC.

[1]*Uganda Cancer Institute and Makerere University School of Medicine, Kampala, Uganda;* [2]*Center for AIDS Research, Case Western Reserve University (Case) School of Medicine, Cleveland, OH;* [3]*Kenyatta National Hospital, University of Nairobi College of Health Sciences, Nairobi, Kenya;* [4]*Department of Medicine, Case;* [5]*Ohio State University - AIDS and Cancer Specimen Resource, Columbus, OH;* [6]*Department of Dermatology and Skin Diseases Research Center, Case;* [7]*Department of Epidemiology and Biostatistics, Case;* [8]*Case Comprehensive Cancer Center;* [9]*Divison of Cancer Treatment and Diagnosis, National Cancer Institute, Bethesda, MD; and* [10]*Fogarty AIDS International Training and Research Program, Case. (Bolded author is Case Fogarty trainee.)*

Purpose: To build capacity in the resource poor setting to support the clinical investigation and treatment of AIDS-related malignancies in a region of the world hardest hit by the AIDS pandemic.

Methods: An initial MEDLINE database search for international collaborative partnerships dedicated to AIDS malignancies in developing countries failed to identify any leads. This search prompted us to report progress on our collaboration in this aspect of the epidemic. Building on the formal Uganda - Case Western Reserve University (Case) Research Collaboration dating back to 1987, established NIH-supported centers of research excellence at Case, and expanding activities in Kenya, scientific and training initiatives, research capital amongst our institutions are emerging to sustain a international research enterprise focused on AIDS and other viral-related malignancies.

Results: A platform of clinical research trials with pragmatic design has been developed to further enhance clinical care and sustain training initiatives with partners in East Africa and the United States. An oral chemotherapy feasibility trial in AIDS lymphoma is near completion; a second lymphoma trial of byrostatin and vincristine was developed; feasibility trials of indinavir and imatinib mesylate for endemic and AIDS Kaposi's sarcoma; and a histopathology study of squamous cell carcinoma of the conjunctiva are planned.

Conclusions: In the absence of published reports of evolving international partnerships dedicated to AIDS malignancy in resource constrained settings, we feel it is important for such progress on similar or related international collaborative pursuits to be published. The success of this effort is realized by the long-term international commitment of the collaborating investigators and institutions to sustain this effort in keeping with ethical and NIH standards for the conduct of research; the provision of formal training of investigators and research personnel on clinical problems our East African partners are faced with in practice; and the development of pragmatic clinical trials and therapeutic intervention to facilitate technology transfer and enhance clinical practice. (Supported in part by NIH grant nos.: CA43703, AI36219, CA62502, CA70081, TW00011, AR39750, AI35097, AI13932, CA83528, and CA66531.)

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THE USEFULNESS OF CASE-CONTROL STUDIES IN UNRAVELLING ASSOCIATIONS BETWEEN INFECTION AND CANCER

Freddy Sitas

Research and Registers Division,
The Cancer Council NSW
Sydney, Australia

While a number of cancer types that are caused wholly or partially by infectious agents has grown over the past decade, there are a few suspected cancer types where the search has proved elusive. Ideally, cohort studies involving tissue (blood) collection prior to the onset of disease would be preferable, but these are costly, and there is often a lack of infrastructure to follow people up. Even for some of the leading infection related cancer types in Africa like cervix, and Kaposi's sarcoma, 100,000 adults would be needed to yield 100-200 new cases per person-year. Having said that, Uganda led the world in the 1970s by recruiting 42,000 children and following them up over seven years, to yield 14 cases of Burkitt Lymphoma, and showing that EBV infection was an important cause. However, because some infections may be cleared or intermittent (e.g. HPV), measuring infection status well before the onset of disease may be less informative. There are many advantages of case-control studies that outweigh the disadvantage of 'lack of temporality'. In some circumstances, measurement of the infectious agent at the time of diagnosis, is perhaps a better measure of current and persistent infection.

By interviewing incident cases of cancer and collecting a blood sample, sufficient cases and controls can be accumulated over time to explore numerous infection-cancer associations. Aside from 'gold standard' recommendations of control selection, hospital controls can be chosen from e.g. people admitted for cancers not thought to be related to the exposure of interest, but other additional groups of controls can be considered, for example (healthy) spouses or partners of cancer cases. Choosing spouse controls is an attractive option because population-based controls often yield low response rates. Examples from a case-control study in Johannesburg and Kampala will be given to illustrate this. Some of the challenges in setting these up will be described.

EPIDEMIOLOGY OF LYMPHOMAS IN PEOPLE WITH AIDS BETWEEN 1981-2001 IN CATALONIA, SPAIN

Galceran J[1], Marcos-Gragera R[2], Borràs J[1], de Sanjosé S[3], Izquierdo A[2], Romaguera A[4], Soler M[4], Ameijide A[5], Casabona J[6].

Tarragona and Girona Cancer Registries[1,2] , CEESCAT[6] , ICO[3], ICS[4], IRCIS[5]. Spain

Objective: To evaluate the risk of lymphomas and their distribution by histological types among people with AIDS, and to estimate the fraction of lymphomas attributable to AIDS in two geographical areas of Catalonia, Spain between 1981-2001.

Methods: A linkage between the Catalonian AIDS Registry and the Tarragona and Girona Cancer Registries was carried out. For each type of cancer and gender, the number of observed cancers in AIDS patients was compared with the number of expected cases based on the cancer incidence in the general population and standardized incidence ratios were estimated. The number of expected cases before AIDS diagnosis was adjusted to the survival of Tarragona cancer patients. The calculation of SIRs was restricted to AIDS patients aged 15 to 69 with any cancer occurring between 60 months before and 60 months after AIDS diagnosis. Both former pathological and haematological diagnoses were reviewed and some prospectively reclassified following the lastest WHO classification. We report the histological features of AIDS-related lymphomas and the population attributable fraction due to AIDS.

Results: Between 1981 and 2001, 838 and 821 people were diagnosed with AIDS in Tarragona and Girona provinces respectively and they were linked to 43,632 Tarragona cancer patients (1981 to 1998) and to 18,787 Girona cancer patients (1994 to 1999). 213 cancers (all sites) in 202 people were identified, 53 of which were non-Hodgkin lymphoma in men leading to a SIR of 126.14 (95%CI=94.18-165.50) and 10 in women leading to a SIR of 192.81 (95%=91.82-355.95). Another 6 of which were Hodgkin lymphoma in men leading to a SIR 31.07 (95% 11.18-68.08) and 1 in women (not statistically significant). Elevated post-AIDS RRs were observed in NHL both in males and females. Similar SIRs were observed in the periods 1981-93 and 1994-99, both in males and females. The attributable fractions were 7.8% for NHL (5.5% in Tarragona, 12.1% in Girona) and 2.7% for HL (2.1% in Tarragona, 4.5% in Girona). They were higher in males (11.5% for NHL, 3.8% for HL) than in females (2.7% for NHL, 1.1% for HL). By period they were 0% (1981-87), 10.1% (1988-93) and 13.6% (1994-99) for NHL, and 0%, 3.9% and 3.5% for HL. The most frequent histological subtypes were: Diffuse large B-cell lymphoma (34.7%), Burkitt lymphoma (11.1%) and immunoblastic lymphoma (6.9%). 15.3% were lymphomas with unknown histologic type and 9.7% probable primary brain lymphomas.

Conclusions: This study shows elevated risk of NHL in AIDS patients and of HL in AIDS male patients. The attributable fraction (7.1%) was higher in males than in females both for NHL and for HL. The most frequent histologic types correspond to those expected.

ENDEMIC BURKITT'S LYMPHOMA IS NOT ASSOCIATED WITH HIV INFECTION: WHAT IS THE CARCINOGENESIS OF THE TUMOUR?

Dr Joseph Lubega[1], Dr Edward Katongole Mbidde[2]

[1]*Senior House Officer in Paediatrics, West Cumberland Hospital Cumbria, UK*
[2]*Director Uganda Virus Res. Inst.; Former Director – Uganda Cancer Institute*

The discovery of Burkitt's lymphoma in the 1960s (Uganda, Mulago Hospital Kampala) heralded a new understanding of cancer genesis, treatment and epidemiology. Burkitt's lymphoma still presents a unique opportunity for studying oncogenesis. Yet less than enough effort has been put in elucidating the mechanisms of carcinogenesis of this tumour.

The HIV epidemic has challenged our previous understanding of endemic Burkitt's lymphoma. The tumor originates from B lymphocytes, but despite the strong association of Burkitt's lymphoma and HIV in the Developed world and against previous postulations that the cancer is due to immunosupression among African children, the HIV epidemic in the Malaria belt has not been associated with a corresponding increase in incidence of childhood Burkitt's lymphoma. Instead some studies show a negative correlation.

In Zambia, it was demonstrated that the incidence of Burkitt's lymphoma has significantly reduced in the HIV/AIDS era while its clinical and demographic characteristics remain unchanged. A study in Zimbabwe found no cases of Burkitt's lymphoma, despite an HIV-1 sero-prevalence of 42.2% in the study population. A case-control study in Kampala Uganda suggested a significantly increased incidence of Burkitt's lymphoma among HIV-1 sero-positive children. However, in a similar case-control study in Kampala, 54 children histologically diagnosed, validated and phenotyped with Burkitt's lymphoma were all found to be EBV-positive, with no association with HIV infection.

Important questions are raised: Is immunocompetence necessary for genesis of Burkitt's lymphoma? What factors (other than EBV infection), are involved in the genesis of Burkitt's lymphoma? What does Malaria have to do with Burkitt's lymphoma? Has the interaction of EBV and HIV, caused decrease in Burkitt's lymphoma? Is the HIV epidemic an "incidental" feature to a cancer whose incidence was falling anyway? The incidence of Burkitt's lymphoma in Zambia was shown to fall progressively even before the HIV epidemic. Which environmental factor(s) are responsible for this phenomenon?

The co-existence of HIV and Burkitt's lymphoma, both endemic, presents a natural experiment for us to study. The value of accurate, detailed, thorough, multi-centre surveillance and study of endemic Burkitt's lymphoma cannot be over-estimated. Extensive cytogenetic studies in the African setting are urgently required. A national or regional Burkitt's lymphoma study group would go a long way in achieving this.

EMERGING PATTERN OF OCULAR AND PERIOCULAR LESIONS IN H.I.V POSITIVE PATIENTS, IN CALABAR: A HISTOPATHOLOGICAL STUDY

PROF. IMA-OBONG EKANEM, DR UDUAKE E. ASANA, DR BASSEY ETIM

UNIVERSITY OF CALABAR TEACHING HOSPITAL, CALABAR-NIGERIA

A retrospective histopathological study to determine the emerging pattern of ocular and periocular in H.I.V patients at the University of Calabar Teaching Hospital, (UCTH) Calabar, is presented.

A total of 30 ocular and periocular specimen were received between January 2001 and December 2003. This constituted 1% of all surgical specimens received in the Department of Pathology, UCTH over three (3) year period. 24 (70%) were histologically reported while 6 (30%) were not reported. 66% of the reported cases were malignant lesions while 34% were benign lesions. Of the reported lesions, 33% had H.I.V screening done while 67% had no H.I.V screening test. 16.5% of the specimen were H.I. sero-positive, and the remaining 16.5% were seronegative.

Three times as many H.I.V-seropositive patients had malignant lesions in comparison of those who were H.I.V-seropositive that had benign lesions. More females than males with ocular lesions were H.I.V seropositive with a male to female (M:F) ratio of 1:3. This conforms to the well-known female H.I.V-seropositive preponderance among Nigerians.

This study reveals an increasing number of squamous cell carcinoma of the conjunctiva associated with H.I.V in Calabar, Nigeria, as already documented in East Africa.

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CLINICAL PRESENTATION OF EPIDEMIC AND ENDEMIC KAPOSI'S SARCOMA IN UGANDAN CHILDREN

Banura C, Orem J, Bitamazire E, Weiderpass E, Whalen CC, Remick SC and Katongole-Mbidde E

Introduction: Since the AIDS epidemic, the incidence rate of KS in childhood has been rising. Two clinical presentations of childhood KS have been described in previous studies, which were limited due to small sample sizes that did not allow for comparative analysis.

Objective: To compare the clinical presentation for epidemic and endemic KS on admission at the Uganda Cancer Institute.

Methods: Epidemic KS (EPI-KS) defined as the form that is associated with HIV infection and presents as a lymphadenopathic disease usually with involvement of the mucus membranes of the visceral organs and often with generalized skin lesions. Endemic KS (END-KS) defined as the form that is not associated with HIV infection presents as a lymphadenopathic disease with either absent or sparse skin lesions, and often involve the mucus membranes of the visceral organs. Medical records data abstraction by a standardized form of 170 children below age 15 diagnosed with KS between January 1995 and December 2003.

Results:

	Childhood KS(total 165 children)	
	Endemic n=15 (9%)	pidemic n=150 (91%)
Boys	0	93
Age-Median	5 (range 1-14)	7 (range 1-14)
History of blood transfusion	1	31
Maternal HIV+	1 positive for 3 tested	46 positive for 52 tested
Concurrent opportunistic infections	8	150
Family history of KS	0	6
Lymphadenopathy	7	138
Skin Lesions	7	96
Oral cavity KS lesions	2	87
Lymphedema	6	81
Pulmonary KS (suspected)	5	34
Eye KS lesions	0	29
Intra-abdominal KS lesions (suapected)	2	34
Genital organs KS lesions	0	30
Parotid enlargement	0	27

* 5 excluded due to missing information on most variables

Conclusion: Endemic childhood KS is still a rare disease. Vertical and horizontal transmission of HHV8 may explain the increase in epidemic KS. Ocular, genital and parotid enlargement appears to be features of epidemic KS.

HUMAN PAPILLOMA VIRUS IN UTERINE CERVIX OF HIV POSITIVE AND HIV NEGATIVE WOMEN AT A HEALTH CENTRE IN NAROBI, KENYA

G.W. Nakitare[1], R. Yamada[1,2], L.W. Kirumbi[1], E.N Songok[1], S. Osman[1], H. Ichimura[2,3], T. Sasagawa[2,3], A. King'oro[1], M. Inoue[3], D.K. Karanja[1]

[1]*Kenya Medical Research Institute*
[2]*Japan International Cooperation Agency (JICA)*
[3]*Graduate school of medical science, Kanazawa University*

Objective: To determine the prevalence of HPV among HIV positive and negative women and factors that may contribute to HPV infection in a low income setting in Nairobi, Kenya.

Method: This was a cross-sectional study in women attending a clinic at a health center. Participants were recruited after counseling and giving informed consent. Blood samples were obtained and tested for HIV. Samples for HPV and cytology were obtained from the uterine cervix using a cervix brush. DNA from HPV samples was extracted and amplified by the polymerase chain reaction using the consensus primers GP5 and GP6. The amplified products were visualized and analyzed on agarose gels using standard procedures. Pap smears were read by the Bethesda system.

Results: Three hundred and twenty samples were obtained and analyzed. Eighty eight (27.5%) were HPV positive. Ninety one (28.4%) were HIV positive. Forty nine (53.8%) of the 91 HIV positive women were HPV positive. Thirty nine (17.0%) out of 229 HIV negative women tested positive for HPV (p<0.001,OR=5.73). Of those who tested positive for HPV, 49 (55.7%) were positive for HIV. Age at first sex intercourse was lower in HPV positive women compared to HPV negative women (mean±SD:17.4±2.1 versus 18.6±3.1, p<0.001). The number of sexual partners were higher in HPV positive women compared to HPV negative women (mean±SD:2.7±2.1 versus 1.8±1.2, p<0.001). Out of 49 women who were both HPV and HIV positive, 26 (53.1%) had abnormal Pap smear. Four out of 39 (10.5%) of HPV positive but HIV negative women had abnormal Pap smear.

Conclusion: HIV infection increases the risk of infection by HPV. Sex at early age and multiple sex partners also are related to the higher risk of HPV infection.

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CERVIX CANCER CONTROL IN AFRICA AND OTHER DEVELOPING COUNTRIES

N. KEITA, M. KOULIBALY, I. S. KABBA, R. SANKARANARAYANAN,
S. WHELAN, D. M. PARKIN

Cervical cancer is the most common cancer among women in Africa particularly in sub-Saharan Africa and most developing countries. Most of cases occur to women aged 30-69 and are diagnosed at an advanced stage with huge social consequences. This makes it an important public health problem. It is well-known that cervical cancer can be successfully prevented if the precancerous lesions which progression is slow (10-15 years) are identified in time and effectively treated. If the cytology based approach in the developed countries has helped in the substantial reduction of morbidity and mortality rates of cervical cancer, this is not the case in most developing countries which have experienced this method. The low-resources countries face serious institutional and sociological obstacles that contribute to hinder successful cervical cancer control programs. Those obstacles are among others : the service cost, the low training of providers, the inadequate infrastructure and equipment, the cultural and behavioural barriers – which have as consequences the low availability, the low accessibility and the low quality of health care services. The existence of these difficulties led to the research, the assessment, development and the promotion of simple, danger-free, cheap and acceptable alternative approaches such as visual inspection methods in low resource settings. This topic focuses on the implementation initiatives of cervical cancer control programs in some developing countries, with emphasis on:
- The importance of women screening with effective methods to ensure cost effective services.
- The insurance of health care services approaches for positive screen ed women.
- The interest of follow-up and assessment system.
- The place of the quality control and the training in the process.
- Finally, the approaches to be developed to obtain a large coverage of the high-risk popoulation and insure the program durability.

Key Words : Cervix cancer; Prevention; Quality Control; Developing countries.

A PERSPECTIVE ON CONTROL OF CERVICAL CANCER IN LOW AND MEDIUM RESOURCE COUNTRIES

R. Sankaranarayanan MD[1], S. Thara MD[2], M. Shrestha MD[3], T. Ngoma MD[4]

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[2]Division of Cytopathology, Regional Cancer Centre, Trivandrum, India
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Uterine cervical cancer is the second most common cancer among women worldwide, with an estimated 493,000 new cases and 274,000 deaths in the year 2002. It is the most common cancer in women in many developing countries due to lack of or inefficient existing screening programmes, a high prevalence of HPV infection and high parity. Low burden is experienced in developed countries with screening programmes and in countries with religious regulation of sexual behaviour and high prevalence of male circumcision. Despite the fact that cervical cancer offers a great potential for prevention, early detection, and cure, it still accounts for half of the global gynaecological cancer burden. A critical appraisal of reasons for the failure or sub-optimal performance of cytology screening has led to the evaluation of alternative testing approaches such as visual inspection with acetic acid (VIA), visual inspection with Lugol's iodine (VILI) and HPV testing. Earnest implementation of current developments in screening have the potential to dramatically reduce the burden of this cancer. Prophylactic vaccination holds promise for the future. The treatment outcomes in cervical cancer can be improved by early clinical detection and treatment. The differences in the outcome of cancer treatment across the world are due to vast disparities in health service infrastructure and accessibility, human resources, and service delivery. Advocacy and political will to invest in health care infrastructure hold the key for effective cancer control and reducing the burden of disease globally. The current developments in cervical cancer control will be discussed in detail.

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INCIDENCE OF CERVIX CANCER IN GOIÂNIA: A DESCRIPTIVE ANALYZE 1988-2002

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Introduction: In Brazil the Incidence of cervix cancer is the third most common cancer in women. It is the fourth cause of deaths for cancer in the female population (INCA, 2005). The mortality rate for this cancer was of 4,61/100.000 women, in the year of 2002, representing a percentile variation of 34% in relation to the 1979 rate (3.44/100,000 women). In 2005, it was estimated the occurrence of 16.480 new cases and 4,110 deaths all country for cervix cancer. In Goias the mortality rate from the malignancies in women was 52,29/100.000 in the period of 1995-1999 and the incidence crude rate expected for 2005 is 23,56/100000 (INCA 2004). In Goiânia the SMR for cervix cancer in the period of 1988 the 2002 was of 8,38/10000(RCBPGO, 2004 and the incidence rate in Goiânia it was estimated CR:28,00/100000)

Objectives: The present study have the purpose to analyze it descriptive aspects of cervix cancer in Goiânia for the period of 1988 to 2002 and to describe occurred changes in this period.

Methods: The data are collected from 1988 up to 2002. The information sources are laboratories, hospitals and clinics specialized, in the diagnosis and treatment of cancer patients in Goiânia. The SPSS 10 was used to calculate the frequencies and tables. To calculate the incidence rates we used the populations census of 1991,1996 and 2000. (IBGE,2000).

Results: During the period of 1988, 91.3% of the cases of cancer in Goiânia had been verified histology, while that 6.8% of the cancer cases had been verified by cytology and 1.2% from death certificates. It had been collected 2811 cases of cervix cancer from 1998 to 2002. We observe an increase number of diagnosis of cervix cancer from 1997 until 2002. Age distribution varies from 30 to 50 years. The squamous cell carcinoma being the most frequent with 52,3% of all morphologies, follow Carcinoma Soe,12,2%; Adenocarcinoma 7,8%.The extension of disease, it observed (38,7%) 866 "in situ", 1113 (32,2%) localized, 48 (2,1%) regional, 200 (5,7%) distant metastases. When comparing the morphologic types with the extension we notice that, of 1743 patients CEC, 493 (33,0%) had extension "in situ"; 421 Carcinomas Soe, 336 (86,6%) and adenocarcinomas 36 (17,1%.) Distant metastases was associated with adenocarcinoma p<0000. Comparing the risk of metastases for squamous cell carcinoma and adenocarcinoma we have an Odds ratio of 4,33 IC95% (0,989-18,97).When we analyze the extension of disease for groups of five years we observe an inversion from invasive to in situ from 1998 to 2002. p<0,000.

Discussion: The cervix cancer is the second cause of death for cancer in women resident in Goiânia. Among all of types, of cancer in females the cervix cancer is one of the highest potential of prevention and cure, arriving close to 100%, when early diagnosis is done. In Goiania the turnover of the diagnosis from invasive cancer to in situ could be reflecting the national policies in cancer prevention and early detection.

Conclusions: The early diagnosis is the pattern of the cervix cancer in goiania in the last five years nevertheless the number of cases are increasing they are initial disease.

CERVICAL CANCER: SCREENING VERSUS "MEDICAL INDICATION"

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Background: The goal of the Dutch nationwide screening program for cervical cancer, which started in 1996, is early detection of premalignancies of invasive cervical cancer in women aged 30 to 60. Fact is that also invasive cancers are being detected. The aim of this study is to determine differences in tumour stage, Pap smear history, neighbourhood and urbanisation at time of diagnosis and survival, between invasive tumours detected by means of the screening program (SP) and invasive tumours detected based on medical indication (MI) in the region of the Comprehensive Cancer Centre Stedendriehoek Twente (CCCST).

Methods: 263 cervical cancer cases in women aged 30 to 60 were selected from the regional CCCST cancer registry (1,2 million inhabitants) in the period 1992 to 2001. From the medical records patient characteristics, tumour characteristics, treatment and follow-up data were collected. Way of detection of the tumour and Pap-score and KOPAC score of the latest seven smears were registered.

Results: 35% were SP-tumours and 65% were MI-tumours. SP-tumours are lower stage tumours than MI tumours; 84% versus 57% FIGO stage I tumours. 81% in the SP-group and 74% in the MI-group had Pap IIIB or higher as "diagnosis smear". More women with a SP-tumour had the latest Pap smear before the "diagnosis smear" ("foregoing smear") because of the SP than women with a MI-tumour; 85% versus 63%. 7% in the SP-group and 12% in the MI-group had Pap IIIB score or higher as foregoing smear. No differences were found in the incidence of SP-tumours and MI-tumours between different urbanisation grades/different neighbourhoods. Women in the MI-group had a two fold increased risk of death (not significant) compared to women in the SP-group, adjusted for age, FIGO stage, lymph node status and morphology.

Conclusion: Attention has to be paid to optimal treatment of precursor lesions and prompt follow-up.

BIOMARKERS FOR CERVICAL CANCER SCREENING IN DEVELOPING COUNTRIES

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Cervical cancer is the leading causes of infectious disease associated morbidity among women worldwide. It remains the the second leading cause of cancer in women from developing countries. Although an HPV vaccine is about to be be licensed, the impact on women from developing countries in the near future is questionable because of cost and problems with implementation. In addition, the current HPV vaccine will cover only 2 of the 15 oncogenic types, hence cancer screening programs will remain essential for the near foreseeable future. Recent advances in both the and pathophysiology of HPV has allowed for new opportunities to intervene in women at high risk of developing cervical cancer. Studies have now shown that HPV persistence is a necessary step towards cancer. In young women, HPV detection usually represents a recent infection. However, in older women over 30 years of age, the detection of HPV reflects persistence, and consequently identifies a women at significant risk for developing invasive cancer. HPV screening is now used in many countries for primary screening and may be a viable technique in developing countries for referral of 'at risk' women. The test can be obtained in rural settings and can be obtained using self-administered swabs. New adjuvants to Pap smear screening are also on the horizon based on our better understanding of the natural history of HPV. HPV oncogenes E6 and E7 result in genomic instability. For example, E7 induces increasing expression of the cyclin dependent kinase inhibitor p16ink4a . Recent data suggest that detection of p16ink4a from cervical samples is a sensitive and specific marker of CIN 3 lesions. Access to stored samples for retrospective testing of predictive biomarkers are critical in the development of new and better cancer diagnostics.

KNOWLEDGE, ATTITUDES AND PRACTICES ON CERVICAL CANCER SCREENING AMONG MEDICAL WORKERS OF MULAGO HOSPITAL

Mutyaba T and Mmiro F

Background: Cervical cancer is the commonest cancer of women in Uganda. Over 80% of women diagnosed in Mulago national referral and teaching hospital, have advanced disease. Pap smear screening is free in the gynaecological outpatients clinic and the postnatal/family planning clinics, as an opportunistic rather than systematic screening programme. Medical students in the third and final clerkships are expected to learn techniques of screening.

Objectives: To describe knowledge, attitudes and practices towards cervical cancer screening among medical workers of Mulago hospital.

Methods: In a descriptive cross-sectional study, a weighted sample of 310 medical workers including nurses, doctors and final year medical students were interviewed using a self- administered questionnaire We measured knowledge about cervical cancer: (risk factors, eligibility for screening and screening techniques), attitudes to cervical cancer screening and practices regarding screening.

Results: Response was 91.9 % (285). Of these, 92.6% considered cancer of the cervix a public health problem and 81.1% knew it was curable. Knowledge about Pap smear was 82.8% among respondents. Less than 40% knew risk factors for cervical cancer, eligibility for and screening interval. Of the female respondents, 68.4% didn't feel susceptible to cervical cancer and 81.2% had never been screened. Of the male respondents, only 25.7% had partners who had ever been screened. Only 14% of the final year medical students felt skilled enough to use a vaginal speculum.

Conclusions: Despite knowledge of the gravity of cervical cancer and about the Pap smear, attitudes and practices towards screening were negative. This was a descriptive study, there is need for further research to explain/understand these attitudes and practices and identify possible interventions to change them. Medical students training on screening needs review.

CERVICAL CANCER IN CHINA

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Introduction and Objective: Using various sources on cervical cancer statistics, describe the geographic distribution and changes in mortality from the 1970s till now, and the incidence and mortality profile at present in China. Aiming to provide evidence and reference for clinic, basic research and making prevention and control strategy for cervical cancer in China.

Data Sources and Methods: Data derived from two national mortality retrospective surveys in 1973-1975 and 1990-1992, a routine reported mortality data from Ministry of Health (from 1987-1999) and the incidence and mortality data from several cancer registries in China which involved in Cancer Incidence in Five Continents the 8th version. Joinpoint analysis, log-linear regression model (based on Poisson distribution) were used for estimating the current incidence and mortality pattern.

Results: The mortality rate for cervical cancer declined from 10.7 per 100,000 in 1973-1975 to 3.9 per 100,000 in 1990-1992 (- 63.64%), ranking dropped from the 3rd to the 6th most common cancer in women in China during that two decades. But the declination was not even, high-risk areas remain existed where high rates kept at very high level and most located in rural counties in the mid-west of China, such as Wudu in Gansu and Yangcheng in Shanxi. The decreasing trend in cervix cancer mortality was sharper in urban areas (from 1987, dramatically decreasing at -9.4% per year until 1993 and then at -4.3% per year till 1999) than in rural areas (-3.5% annually for the whole period). Nevertheless, the mortality declines were confined to the older age groups (older than age 55), younger women showed increasing trends (for urban women aged 35-44, the increase of 4.1% per year was a statistically significant). It was projected that there would be 48,000 new cases and 23,000 deaths from cervical cancer in 2005 in China, increased 13.8% compared with the statistics in 2000, due to both increasing in cancer risk and population growth and ageing.

Discussion and Conclusion: Although the mortality substantially declined during last years, with the increasing cancer risks among young women and the continue population growth and ageing, cervical cancer is still a major health problem for women in China. The focus of prevention and control programme would be in rural areas, especially in mid-western areas, and young women in the city. Various prevention strategies referring to the different risk factors for the disease (such as high risk 'oncogenic' types of HPV infection, STD, smoking, hygiene situation). Screening programmes, whether Pap smear, visual inspection or even HPV testing would be carefully planned and utilized according to the programme whether suits the local context, after the costeffectiveness evaluation. Vaccines against HV will, undoubtedly, be the chosen prevent method for cervix cancer in the long term. Nevertheless, the impact on the rates of cervix cancer would be not appeared for many years.

CERVICAL CARCINOMA IN ALGIERS, ALGERIA: HUMAN PAPILLOMAVIRUS AND LIFESTYLE RISK FACTORS

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We conducted a hospital-based case-control study in Algiers, Algeria. A total of 198 CC cases (including 15 adeno- and adenosquamous carcinomas) and 202 age-matched control women were included. HPV DNA in cervical cells was evaluated ussing a PCR assay. Ors and corresponding CIs were computed by means of unconditional multiple logistic regression models HPV infection was detected in 97.7% of CC cases and 12.4% of control women (OR = 635). 19 different HPV types were found. HPV16 was the most common type in both CC cases and control women, followed by HPV18 and 45. 12 types (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 66, and 73) were found as single infections in CC cases. Multiple HPV infections did not show a higher OR for CC than single infections. In addition to HPV infections , husband's extra-marital sexuel relationships with other women (OR = 4.8) or prostitutes (OR = 3.2), residing in a rural environment for most of one's life (OR = 4.9), and indicators for poor sanitation or poor hygiene were the strongest risk factors for CC. OC use was unrelated to CC risk, while multiparity emerged as a significant risk factor after adjustment for sexual habits. IUD users showed a lower CC risk than non-users. The role of major risk factors, except inside toilet, was confirmed in the analysis resticted to HPV-positive women. The distribution of HPV types in CC cases and control women in Algeria is more similar to the one found in Europe than the one in Sub-Saharan Africa, where HPV 16 is less prevalent. A vaccine against HPV16 and 18 may be effective in more than three-quarters of CC in Algeria.

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MULTIPLE INFECTIONS IN CASES OF CERVICAL CANCER IN TROPICAL AFRICA - AN UPDATE

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A sizeable number of infections has been incriminated in cervical carcinogenesis with varying degrees of evidence. Human papilloma viruses play a key role. There is the puzzling finding of increased antibody titres to herpes viruses (HSV 1/2, CMV, EBV) and Chlamydia trachomatis. HIV-infection also needs to be taken into consideration. However, twenty years ago shortly after the outbreak of the AIDS-epidemic, patients were affected much less frequently than controls. Recently, no or only slight differences in risk were noted for women with or without HIV-infection. The last addition may be falciparum malaria. In areas of Uganda with severe endemicity high grade cancers predominated with relative frequencies twice as common as in areas of low endemicity. - A unifying concept is proposed for the genesis of cervical cancer in tropical Africa assuming differing relationships between load of associated infections and state of immunodeficiency from HIV and falciparum malaria with variable outcome in the target epithelial cell of the cervical mucosa. A mounting load of agents together with slight to moderate deterioration in immunity may enhance cellular proliferation and lead to an increase of poorly differentiated carcinomas of high grade malignancy. In severe immunodeficiency from both HIV and falciparum malaria attacks may be so numerous as to kill rather than to transform the epithelial cervical cell. Likely mechanisms of such cell death are apoptosis and cytolysis. The hypothesis is not unattractive. It might explain why an association between HIV-infection and cervical cancer as observed in western countries could not be demonstrated in tropical Africa.

WILL WOMEN COME FOR CERVICAL CANCER SCREENING? FACTORS INFLUENCING UPTAKE OF REPRODUTIVE HEALTH SERVICES IN UGANDA

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Background: Cervical cancer is the commonest cancer of women in Uganda. Over 80% of women diagnosed in Mulago national referral and teaching hospital, have advanced disease. Pap smear screening is expensive. Visual inspection is a cheap and easier screening method, achieving similar effectiveness as the Pap smear. Effectiveness of population screening programmes depends on high uptake and for cervical cancer, minimal loss to follow up. Uganda has poor indicators of reproductive health (RH) services uptake; 10% postnatal care attendance, 23% contraceptive prevalence, and 38% skilled attendance at delivery.

Aims: To understand/explain the factors that influence usage of reproductive services. To identify feasible interventions to improve on uptake of RH services.

Methods: We carried out eight focus group discussions. Two each of women and men in the community, 2 of women in the postnatal clinic and 2 of nurses in the postnatal clinic. Each had 8 to 13 participants. An interviewer and observer conducted the sessions, which were tape-recorded. After data transcription, we conducted framework analysis.

Results: Ignorance about the cancer, cultural constructs/beliefs about the illness, economic factors, domestic power relations and unfriendly health services were identified as major constraints to uptake of reproductive heath services.

Conclusions: To achieve an effective cervical cancer screening programme, the performance of government health units in Uganda needs to be improved to increase clients' confidence. Men need to be informed and involved in women reproductive health issues. With no confidence in fixed clinics, other delivery systems like specific mobile clinics/screening camps should be considered.

Acknowledgements

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CERVICAL CYTOLOGY IN HIV POSITIVE AND NEGATIVE WOMEN SEEN AT A HEALTH CENTRE IN NAIROBI, KENYA

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Objectives:

1. To compare prevalence of abnormal PAP smear in HIV positive and negative women.

2. To compare CD4 cell count among HIV positive women with abnormal and normal PAP smears.

Methods: This was a cross-sectional study carried out in a health centre in Nairobi, Kenya. Women were recruited after undergoing VCT for HIV and giving informed consent. Data was collected using structured questionnaire. Age at sexual debut and the number of sexual partners over the last ten years were noted. PAP smear samples were taken in all women and read using Bethesda system. Blood samples were taken for CD4 cell count in HIV positive women.

Results: Three hundred and twenty four clients were recruited between November 2004 and March 2005, and results are presented. 21% of the women had abnormal PAP smears and 29 % were HIV positive. The rate of abnormal PAP smears was 40.4% (38 out of 94) in HIV positive and 13% (30 out of 230) in HIV negative (p < 0.001 OR = 4.52). CD4 cell count ranged between 5 and 1116 (295±237). There was no statistically significant difference in CD4 cell count in women with abnormal and normal PAP smears (mean = 257 + 201 versus 322 + 255). The age at sexual debut was younger in the HIV positive versus the HIV negative (mean 17.2 + 2.3 versus 18.7 + 3.0 p = <0.001). The number of sexual partners was higher in the HIV positive versus the negative (2.7 + 2.0 versus 1.7 + 1.2, p = <0.001).

Conclusion:

1. HIV positive women have four times more risk, (95% CI), of having abnormal PAP smear as

compared to those who were HIV negative.

2. HIV positive women with abnormal Pap smears showed a tendency of lower CD4 cell count than those who had normal Pap smears.

INFECTIONS AND CANCER

Michael C. Kew

Infectious agents are probably the most the most frequent global causes of human cancers, with viruses being responsible for about 15% and bacteria and helminths for a further 5% of tumours. At present, prevention or treatment of infections capable of causing cancers offers the best prospect for cancer prevention. Human papillomavirus (HPV) is the major cause of cervical cancer, particularly in low income countries, but is also a risk factor for anogenital, squamous head and neck, and skin cancers. Most cervical cancers are caused by HPV types 16 and18. HPV DNA integrates into chromosomal DNA. Hepatitis B virus (HBV) is responsible for about 80% of hepatocellular cancers in high incidence regions in Africa and the Far East. Chronic infection is mainly established in early childhood. Both direct and indirect (via cirrhosis) carcinogenic mechanisms are operative. HBV DNA integrates into chromosomal DNA. Universal immunization against the virus has already resulted in a 70% reduction in incidence of the tumour among vaccinees. Hepatitis C virus (HCV) is the main cause of hepatocellular cancer in industrialized countries, often in association with alcohol abuse. The tumour almost invariably develops in the presence of cirrhosis, and viral DNA does not insert into chromosomal DNA. Ebstein Barr virus (EBV), the first human virus to be directly implicated in carcinogenesis, is implicated in the pathogenesis of Burkitt's lymphoma, Hodgkin's disease, non-Hodgkin's lymphoma, nasopharyngeal carcinoma and lymphomas. This virus infects >90% of the global adult population, and infected individuals become life-long carriers. The distribution of Burkitt's lymphoma parallels that of holoendemic malaria and EBV may be a co-factor in causing the tumour. Helicobacter pylori (HP), probably the most common chronic bacterial infection worldwide, causes 50 - 75% of gastric cancers. Late stages of the infection cause gastric atrophy and metaplasia, progressing to gastric cancer. Cardial rather than antral tumours develop. Injection of CagA toxin into epithelial cells is important in the genesis of the malignant transformation. HP may also cause mucosa-associated lymphoid tissue (MALT) lymphoma.

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PROSPECTIVE STUDY ON THE RISK OF HEPATOCELLULAR CARCINOMA AMONG HEPATITIS B VIRUS - POSITIVE BLOOD DONORS

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Chronic hepatitis B virus (HBV) infection is a major risk factor of hepatocellular carcinoma (HCC) in Asia and Africa. We conducted a community-based prospective study for over 8 years by record linkage to the Osaka Cancer Registry to assess the incidence of HCC and the risk factor among asymptomatic HBV infected persons. The subjects were 2,519 individuals who were positive for HBV surface antigen (HBsAg) in voluntary blood donation.

The incidence of HCC ($/10^5$ person-years) ranged from 47 to 438 among those aged 40-69 years. The 9-year cumulative incidence of HCC was 2.2% among males and 0.61% among females. In multivariate Cox proportional hazard analysis, being male (F/M): 0.38 (95% CI=0.17-0.88) and elevated serum alanine aminotransferase (ALT) level (>= 30 KU / 29KU >=): 3.83 (95% CI=1.91-7.69) appeared to be risks of developing HCC. However, a stepwise increase in risk was not shown as the serum ALT increased. Age at blood donation and being HBe-antigen positive were also associated with the risks of HCC, but they were statistically insignificant.

These findings assure the importance of immunization with HBV vaccine in countries where HBV infection is prevalent.

THE EFFECT OF EPSTEIN BARR VIRUS ON SURVIVAL IN HODGKIN LYMPHOMA: A POPULATION-BASED STUDY

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Background: The most important environmental factor in the pathogenesis of classical Hodgkin lymphoma (cHL) is the Epstein Barr virus (EBV), a transforming agent that is involved in 20-40% of cases in the western world. The effect of EBV on clinical outcome in HL is conflicting in previous studies. In this population-based study we investigated the effect of EBV on survival.

Methods: From January 1989 to December 2000, all patients with histological confirmed cHL diagnosed in the region of the Comprehensive Cancer Centre North Netherlands (CCCN) were selected from the pathological anatomy national automated archive (PALGA) and matched with the regional cancer registry of CNNN. The presence of EBV was determined by EBER in situ hybridization. Relative survival was used to estimate the relative excess risk of death (RER) at 5 years adjusted for background mortality using the life expectancy tables of the Netherlands. The impact of EBV on relative survival of cHL patients was studied in a multivariate Poisson regression model.

Results: EBV was detected in tumor cells in 146/418 (35%) cHL patients. EBV-positive cHL occurred more frequently in patients older than 45 years (p=.002), in males (p=.001) and with histological subtypes other than nodulair sclerosis (p<.001). However, no significant relative survival difference was observed between EBV-positive and EBVnegative patients after a median follow up period of 7 years. For subgroups, the 5-year relative survival was 96% for EBV-positive versus 90% for EBV-negative patients aged 15-44 years (p=.11) and 69% for EBV positive versus 85% for EBV-negative patients aged 45-79 years (p=.04). The RER of EBV-positivity adjusted for stage, age and gender in the subgroup of patients aged 45-79 years was still adverse, 2.33 (0.91-6.01), compared to EBV-negativity.

Conclusion: This study suggests that the effect of EBV on survival in cHL differs between age groups. This difference may explain the conflicting results in previous studies. The adverse effect of EBV-positive status in the older cHL patient subgroup may reflect a more aggressive behavior of EBV-positive tumor cells in combination with an aging immune system.

EPIDEMIOLOGICAL STUDIES OF INFECTIONS IN CHILDHOOD CANCER: NEW RESEARCH IN MALAWI AND ZAMBIA

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Background: The identification of cancers in adults associated with the humanimmunodeficiency virus (HIV) has provided a way of improving understanding of cancers with infectiousand, theoretically, preventable aetiology. In contrast, the role played by infectious diseases in childhoodcancers has been very little studied. Relative to adults, there are very few published studies on the risk of cancer in HIV infected children. A review of childhood cancer at the University Teaching Hospital inLusaka Zambia from 1994 to 2001, however, found lymphomas the most frequent tumour type, andretinoblastoma accounting for 11% of cancer types. Approximately 20% of cases were HIV positive, orclinically suspected to have HIV infection. A new study of infections and childhood cancer currentlyunderway in Blantyre Malawi, and plans for an additional in research in Zambia are described.

Objective: To identify cancer sites (or types) among children associated with HIV and other infections, and to investigate childhood and maternal factors (including sexual behaviour) associated with the risk of childhood cancers, in particular with Burkitt lymphoma. Methods: All newly diagnosed cancer patients less than fifteen years old are eligible for recruitment into a cross-sectional study in Malawi. Data on a range of risk factors, child and maternal for all cancers are also being collected using interviewer administered questionnaires. Data on cancer diagnosis is collected from clinical notes using abstraction forms. Blood samples are collected and tested for specific viruses, bacteria, and parasites including herpes viruses, syphilis, HIV, and malaria. Risk factors for Burkitt lymphoma will be studied by using a case-control study design where controls are children diagnosed with cancers other than Burkitt lymphoma.

Results: Preliminary data collected in Malawi will be presented.

GEOGRAPHIC DISTRIBUTION OF ENDEMIC BURKITT'S LYMPHOMA IN KENYA: EVIDENCE OF SPATIAL CLUSTERING

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Objective: Endemic Burkitt's lymphoma (eBL), first described in the 1960s, is the most common childhood malignancy in tropical Africa. Changes in both the prevalence of HIV infection and increases in malaria drug resistance might impact on the incidence of eBL. In this study, we compared the incdience of eBL among Kenya's Provinces. In addition, we examined the distribution of eBL within Nyanza Province, a high malaria transmission region.

Methods: We analyzed District-level data collected from pediatric cases occurring in Kenya between 1988 and 1997. Ten-year average annual eBL incidence rates were calculated. In addition, we performed a medical record abstraction of eBL patients diagnosed between 1999 and 2004 at Nyanza Provincial General Hospital located in Nyanza Province. We calculated comparative morbidity ratios (CMR=observed cases/expected cases) for third and fourth level administrative units in Nyanza Province and used the Local Moran test statistic to investigate eBL spatial clustering. We also assessed seasonality of eBL occurrence.

Results: On a national level, eBL incidence per 100,000 children varied significantly among Districts. Although Western and Nyanza Provinces experienced the highest incidence rates, District-level rates in these Provinces ranged from 0.0 to 2.29. Spatial analysis of eBL cases within Nyanza Province revealed that eBL cases were not evenly distributed. Importantly, we found a significant low-risk eBL cluster (p = 0.001) and two significant high-risk clusters (p = 0.001) using Division (third) and Location (fourth) administrative level boundaries, respectively. No monthly variability in eBL occurrence was detected ($X2 = 16.86$, $p = 0.11$).

Conclusion: The overall incidence rate of eBL remains high in certain Provinces within Kenya. Significant spatial clustering of eBL cases in a high-malaria transmission region suggests that additional environmental and/or socio-cultural factors may be involved in the etiology of eBL.

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PAPILLOMAVIRUS INFECTION IN RURAL WOMEN IN SOUTHERN INDIA

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Objective: To investigate the prevalence of, and the risk factors for, cervical infection with 44 types of human papillomavirus (HPV) in a rural area in the Dindigul District, Tamil Nadu, India.

Methods: We interviewed and obtained cervical cell samples from 1891 married women aged 16-59 years. HPV positivity was assessed by general primer-mediated GP5/GP6+ PCR and by hybridisation of PCR products in an enzyme immunoassay.

Results: 92 (4.9%) of the women had abnormal findings at liquid-based cytology, including 13 with moderate dyskaryosis and 7 with severe dyskaryosis. HPV prevalence was 16.9% overall and 14.0% among women without cervical abnormalities, or 17.7% and 15.2%, respectively, age-standardised to the world standard population. In all, 21.9% of infections involved more than one HPV type. High-risk HPV types predominated, particularly HPV 16 (22.5% of women infected), followed by HPV 56, HPV 31, HPV 33, and HPV 18. Unlike most populations studied in developed countries, HPV prevalence was steady across all age groups. The few characteristics that stood out as being directly (i.e., nulligravidity, odds ratio, OR, vs 1-2 pregnancies = 2.3; widowhood or divorce, OR vs married women = 2.3; and condom use, OR vs no contraceptive method = 2.6) or indirectly (high school or college degree, OR vs illiterate women = 0.6) associated with HPV postivity involved a small proportion of women.

Discussion: All-age HPV prevalence in the Dindigul District was similar to that found by IARC studies in Latin America, but lower than in Nigeria. The similar HPV prevalence in young and in middle-aged women can have different explanations (e.g., cohort effect, low rates of clearance of HPV infections or frequent re-infections).

MULTIPLE PRIMARY CANCERS IN KAMPALA CANCER REGISTRY

Henny Wabinga, Sarah Nambooze, Juma Amero and Max Parkin

Occurrence of multiple primary cancers (MPC) has been found to be on the increase in most developed countries and the possible risk factors associated with this increase have been environmental, genetic predisposition, heredity and familial syndromes. Little is known about occurrence of MPC in Africa populations and this study demonstrates the characteristics of MPC in low resource African subjects.

The Kampala cancer registry is a population-based registry started in 1953 and covering a population of 1.5 million people. The registry follows the IARC recommendation in defining and identifying MPC. To determine the frequency of MPC, a review of the data of KCR for the period 1960-2004 was carried out. A total of 78 cases of 17328 were considered MPC. Out of the 78 cases, 29 were histologically diagnosed and formed the basis of this study.

The results showed that the first primaries were almost evenly distributed topographically however when the analysis was made on morphological basis, it was found that 15 out of 29 were epithelial and Kaposi's sarcoma formed another 8. And the remaining 6 were miscellaneous. The second primaries were also fairly well distributed topographically but on morphological basis 12 cases were epithelial, 5 cases were KS and the remaining cases were either lymphomas, sarcomas or teratomas. The interval between the first and second primary for the 29 cases was 1001.17 days (min = 0, maximum = 5479, std = 1379.4) with males having a shorter time interval (512.8, minimum = 0, maximum = 2922 std 806.8) than females (average 1397.9, minimum = 0 =, maximum = 5479 std = 1629.8). Epithelial tumours had a shorter interval (average = 651, min = 0, maximum = 2922, std 889.6) that Kaposi's sarcoma (average 836.4 minimum 9, maximum 2396 std 765.3). The low figure of MPC in this registry is probably due to a shorter survival of patients in the low resource population. The higher number of epithelial cancer as compared to other morphological categories is probably related to environmental risk factors.

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THE CHALLENGES CONFRONTING CANCER CONTROL IN SUB-SAHARAN AFRICA

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Executive Director ORCI

Sub- Saharan Africa faces a daunting challenge to deal with an alarming increase of cancer burden. Since independence which was attained by most Sub Saharan African countries more than forty years ago, efforts to provide effective, equitable and affordable cancer care services to their people have stagnated and in some instances have deteriorated. This cannot only be explained by the fact that most of these countries are poor. Most countries lack the political will/commitment and have other overriding competing priorities. There is also the problem of lack of trained manpower which has led to a huge gap of knowledge in cancer control to the extent that Sub -Saharan Africa has not fully benefited from recent advances in nuclear technology and bio-chemical sciences which has brought health tools and technologies to tackle cancer.

The emergence of HIV/AIDS epidemic in Sub-Saharan Africa has also confounded the health scene. The Author thinks that if careful planning is not undertaken, HIV/AIDS will continue to absorb the lion share of the health care resources in Sub- Saharan Africa, making it difficult to translate into action the knowledge that a Comprehensive National Cancer Control Programme intergrated into the existing health service is the driver for improved cancer services in any country.

Policy makers in Sub-Saharan Africa should be aware of the fact that the implementation of a National Cancer Control Programme in their countries depends on the presence of a functional health service, reliable cancer registries and demands that sufficient resources and attention be directed to improve the health services infrastructure and health workforce. The African governments should understand that failure to develop the infrastructure and deploy appropriate motivated workforce in an environment necessary for the workforce to perform optimally is the biggest obstacle in formulating and implementing National Cancer Control Programmes.

The recent interest by WHO (Resolutions in WHA 58) to focus on the problem of cancer globally bodes well for the future of cancer care in Sub - Saharan Africa. Governments in Sub - Saharan countries have to act now.

This paper summarize the challenges confronting cancer control in Sub - Saharan Africa and outlines a framework to develop key interventions.

RISK FACTORS FOR CANCER IN SUDAN

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Sudan is the largest country in Africa. It is multiclimatic, multiethnic and multicultural. Cancer is a multifactorial disease. The ten common cancers in Sudan, according to our records in the Institute of Nuclear Medicine, Molecular Biology and Oncology, in the first five years of our work (1999 – 2004), include breast cancer (17.4%); the most common cancer among females, non Hodgkin's lymphoma (8.9%), leukemia (7.2%), nasopharyngeal carcinoma (4.2%), cancer of the cervix (3.9%), cancer of the ovaries (3.1%) and liver cancer (2.0%). In contrast to western countries, lung cancer is uncommon. Risk to cancer is determined by factors related to environment, infection, nutrition, habits and genetics. Identification of these factors is a corner stone in planning of cancer prevention and control programs. Little is known about risk factors for cancer in Sudan. Our group and some others have contributed to the available information on cancer risk factors in the country. Infection with HBV, EBV and HPV was found associated with increased predisposition to hepatocellular carcinoma, nasopharyngeal carcinoma and oropharyngeal carcinoma respectively. Food contamination with aflatoxins was found predisposing to hepatocellular carcinoma. Dipping of the locally produced tobacco, toombak; in the oral cavity, was associated with increased predisposition to oral squamous cell carcinoma. Mutations in some cancer predisposing genes; P53, GSTM1 and BRCA1, BRCA2 genes were found associated with increased susceptibility to oral, liver and breast cancers respectively. Many other risk factors to cancer remain to be evaluated in Sudan. These include; environmental chemical pollution with pesticides and heavy metals, infection with malaria, schistosomiasis and HIV as well as changes in lifestyle.

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REGISTRATION OF CANCER AS A TOOL IN IMPROVING CARE FOR HAEMATOLOGY ONCOLOGY PATIENTS IN MALAWI

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Objective: The purpose of a cancer registry is to provide data for assessing quality of care, for monitoring trends and for research. The objective of this study is to examine how the registration of cancer can enhance the management of haematological cancer patients in Malawi.

Methodology: All lymphoma cases from a computerized Malawi National Cancer Registry (MNCR) database were sampled. The total number of cases was 2338, covering a period of 19 years from 1985 to 2003. 632 of these cases were excluded from the study because the diagnosis of lymphoma had not been histopathologically nor haematologically verified. 1706 cases were therefore analysed for features deemed vital in assessing quality of oncology care.

Findings: None of the analysed cases had any data on clinical features in the database. Management details only included "therapy" variables which in the majority of cases (995 cases, 58.3%) was recorded as unknown and in 205 cases (12%) was recorded as none. 29 cases (1.7%) had no therapy recorded. The rest of the cases (28%) had one of three main therapy options recorded; chemotherapy (18.9%) or surgery (4.6%) or "palliative" (4.5%). A "status" variable showed that 878 cases (51.5%) were alive and 63 cases (3.7%) were dead at the time of data compilation. The date of data compilation was not recorded for any of the cases, nor were date and cause of death. The "status" of 764 cases (44.8%) was unknown.

Recommendations: Additional variables need to be created in the computerized registry database in order to enable easy and speedy determination of important cancer parameters such as remission and survival rates; the Malawi cancer notification form needs to be amended accordingly. All nation-wide relevant centers should report all cancer related incidents to MNCR as a routine.

THE PREVENTION OF CANCER THROUGH COMMUNITY- BASED INTERVENTIONS (CBIS) IN LOW-RESOURCE POPULATIONS IN GEZIRA STATE, CENTRAL SUDAN

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Gezira state is mainly an agricultural area located in central Sudan with a population of 3-5 millions (seasonal variations). Breast, nasopharyngeal and cervical cancers are the commonest in addition to lymphomas & Leukaemias. The university of Gezira is a community oriented University and the faculty of medicine adopted clearly this strategy. 25% of the of the total credit hours of the executed in community settings (families, rural communities, PHC facilities including rural hospitals). In 2000 the "Basic Development Needs (BDN)", a poverty-alleviating project was launched in one of the poorest localities in Gezira. Through BDN program, in collaboration with state ministry of health and the well established faculty community courses, the following objectives were set, (1) to raise family & community awareness regarding cancer (2) to train students, cluster representatives (CRs) of BDN program, family and community members, (both women and men) on skills necessary for primary prevention of cancer (avoidance of exposure to potential carcinogens and abstinence from incriminated harmful practices, (3) to train the same groups on skills of secondary prevention (early detection and early care-seeking) especially breast self examination (BSE). Through the BDN cluster representatives (both women and men) were chosen and trained. All students in one batch were trained to participate in cancer prevention and detection during their course activities. Both groups were also trained to be involved in training of community members. During one semester the students covered 200 families by training on competences of BSE. Four breast lumps were detected (2 fibroadenomas & 2 malignant tumors). CRs, are already trained and we are expecting a wide coverage of population in the pilot locality.

In conclusion, conducted interventions reflected an efficient and effective use of the available resources of Gezira University, health authorities and local communities. The collaboration with other related sectors and organizations is currently planed for. Such sectors include: education, legislation, the media, industry, agriculture and non governmental organizations working in the state.

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HEALTH INFORMATION SYSTEM: A TOOL TO MONITOR CERVICAL CANCER SCREENING PROGRAMMES

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Health Information Sytem (HIS) is an essential tool to monitor and evaluate cervical cancer screening programmes in low resource countries - a very challenging task. We present an experience based on a pilot study in rural and urban areas in Guinea using visual methods.

The rural site (20 000 inhabitants) was located 200 km from the capital city and screening was assured by means of Mobile services. The urban site covered five communal centres. A centralized computer-based HIS has been established in the department of Pathology/Cancer Registry. Data were collected using five standard client management forms concerning:
1. Screening visit
2. Referral visit
3. Laboratory linkage
4. Post-treatment visit
5. Invasive cancer management

Data entry was processed and reports generated. These reports were sent to different facilities and stakeholders in order to evaluate progress towards programme targets. HIS linked to the cancer registry should indicate changes in rates of false negative women in general programme performance.

PROSTATE CANCER: PRIORITIES AND PRAXIS

Graham G Giles

Microscopic tumours of the prostate occur so commonly in the ageing male as to be considered almost normal; while the incidence of lethal phenotypes is comparatively rare. Widespread PSA testing has increased incidence 2-3 fold in many countries by over diagnosing tumours of low metastatic potential. As a consequence, epidemiologists are shifting focus to 'aggressive' disease. Prostate cancer aetiology remains virtually unknown and no preventive advice can be given; age, ethinicity and family history being the only established risk factors.

Prostate cancer clusters in families and multiple case families are being widely researched to discover susceptibility genes which when mutated increase risk. Sadly, PSA testing has increased the prevalence of phenocopies (tumours diagnosed in families that are not related to a family's putative genetic mutation) and this phenomenon has affected the meaningfulness of family history and may have irretrievably affected this research effort.

Another research focus is the possible influence of common polymorphisms in genes important to crucial physiological process in the prostate and their possible interaction with lifestyle factors. The complexity of potential interrelationships between the several genetic elements in these pathways and environmental exposures requires very large studies I which DNA has been collected. Such studies will be important for identifying which modifiable aspects of lifestyle (e.g. diet, alcohol, tobacco, physical activity) might be targeted for intervention, to reduce risk.

Some potential chemopreventive agents include vitamin E, selenium, Zinc and lycopene. Other agents more appropriate for phamaceutical development include inhibitors of COX-2 and IGF-1. It is important that chemoprevention trials are followed-up for a sufficient period of time and that other endpoints also are captured, because the supplementation of diets with super-physiological does of individual micronutrients has caused unexpected and unwanted results- e.g. the 18% increase in lung cancers observed in the beta-carotene are of the ATBC trial.

TRENDS IN INCIDENCE AND MORTALITY OF PROSTATE CANCER IN THE NETHERLANDS, 1989-2002

Dirx MJM, Reedijk AMJ, Houterman S. On behalf of the working group of the Netherlands

Since 1998 prostate cancer is the most common cancer in men in the Netherlands. There is no structered sceening taken place in the Netherlands although some projects are investigating the efficacy of screening. In this study trends in incidence and mortalty of prostate cancer are studied in the Netherlands over the period 1989-2002.

All prostate cancers diagnosed in the period 1989-2002 were selected from the population-based Netherlands Cancer Registry (NCR). The NCR receives data from the nine regional cancer registries. Age-adjusted incidence and mortality rates were calculated. Trends in incidence and mortality were studied by estimation of the annual percentage change (EAPC).

Incidence figures

In the Netherlands, 7.256 new prostate cancer cases were detected in 2002 which was 19.7% of male cancer. The average age at diagnosis declined during the period 1989-2002 from 73.7 year in 1989 to 70.5 year in 2002. The age-adjusted incidence was 87.1 per 100.000 person years in 2002. During the period 1989-2002 the incidence of prostate cancer increased gradually with an estimated annual percentage change of 2.7% per year (EAPC, p<0.000), from 62.8 per 100.000 in 1989 to 87.1 in 2002. An increase was seen in all age categories only not in the older age categories (>75+yr), with the highest increase in the age categories 50-59 year and 60-64 year (EAPC 8.4% and 7.0% respectively (p<0.000)). The highest estimated annual percentage change was seen in stage 2 and 3 of prostate cancer cases (6.3% in both, p<0.000). During the period 1989-2002 smaller tumours were detected probably due to not-organised psa-screening.

Mortality figures

In 2002 a total of 2.360 men died of prostate cancer in the Netherlands. Prostate cancer mortality has risen only decreased to 29.2 in 2002. This indicated that the increase in incidence was mainly due to early detection, especially through the increased use of prostate specific antigen (PSA) testing. In the Netherlands an increasing trend was seen in incidence of prostate cancer in the period 1989-2002.

Mortality of prostate cancer was stable during this period.

COMPUTER-AIDED DECISION SUPPORT SYSTEM FOR RECOGNITION OF PROSTATIC CARCINOMA

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Introduction: The aim of the modern diagnostics of patients suffering from prostatic carcinoma is its recognition, by using available diagnostic methods, in the stage susceptible to radical treatment. The examinations proved that diagnostic methods used at present (DRE, concentration of PSA in serum, TRUS) can recognize only a small amount of organ confined tumors that are small dimensions (to 0,5 cm3) and hidden ones. Attemps were made to improve the situation.

Aim of the study: The aim of the study is to present an idea of a computer system that determines in a fast way the risk of occurrence of prostatic carcinoma. The system uses patients' data as: examination of antigen PSA, picture of prostatic gland with adenoma, results of histopathological examinations and DRE.

Description of the system: Computer-aided decision system supporting the process of prostatic carcinoma diagnosis consists of database, application diagnosing ultrasonographic pictures and decision-making algorithm. The database contains such informations as: name and surname of the patient, his/her date of birth, family P-CA, free PSA, complete PSA, previous complete PSA, dimensions (height, length, width) of prostate and adenoma, echogenicity of the observed change and its location, longitudinal and transversal ultrasonographic picture of the prostate, result of DRE, histopathological result. There is also a table with standards of concentration of PSA for specified age groups of patients and data concerning TNM classification of prostatic carcinoma with details describing stage of progression on the basis of PSA concentration.

Decision – making module: Database of patients with proper diagnosis of prostatic carcinoma is the basis for decision-making algorithm and for module recognizing abnormalities in prostatic carcinoma on ultrasonographic picture. Computer broadening of interpretation in real imaging of material from ultrasonographic transmitter may increase the objective effects of organ assessment by physicians. Decision-making algorithm determines the stage of progression of prostate carcinoma, its absence or possibility of occurrence (expressed in %) and take a decision about possible immediate or postponed biopsy or withdrawal from biopsy at all. Each new case of prostate carcinoma with known histopathological result is included into the algorithm as a case with proper diagnosis. There is a possibility to work out a self-learning decision.

Conclusion: The presented program is an effective tool for calculation and interpretation of specific prostate antigen concentration in serum. It allows to facilitate calculations of values increasing test specificity. It also supports physician's assignments of patients for prostate biopsy. Extension of the system with database based on pictures obtained by per rectum ultrasonographic method in correlation with concentration variations of PSA and clinical data – may constitute a teaching tool and a basis for more selective tests with help of ultrasound scanner and additional computer. The system is positively appraised by practicing urologists.

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CALCULATING AGE-ADJUSTED CANCER SURVIVAL ESTIMATES WHEN AGE SPECIFIC DATA ARE SPARSE: A COMPARISON AND EVALUATION OF VARIOUS METHODS

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Background: Valid comparison of population based cancer survival outcomes often requires the calculation of age-standardized survival estimates. If data is sparse, the calculation of age specific survival estimates, and hence, direct age standardization is often problematic.

Methods: We reviewed the different practices in the application of age standardization in the recent literature, and empirically evaluate the performance of various methodological solutions in an analysis of data from the population based cancer registry of Harare, Zimbabwe. Age standardization to the World Standard Cancer Patient Populations was done according to the traditional "direct standardization" and to a recently proposed alternative method. For both methods, 3 different age categorization schemes, with age groups in various numbers and width, were applied. Finally, calculations were repeated with truncated age ranges for each combination of methods and age categorization schemes.

Results: In this relatively small developing country data set, the calculation of age-standardized survival often failed when traditional age-standardization was used. Modifications in the number and width of age groups improved the calculability of age-standardized survival estimates, but the obtained estimates varied substantially. The alternative method enabled the calculation of an age-adjusted estimate in almost every case. Truncated survival estimates showed much less variation, particularly when the age-specific survival estimate was unreliable for the oldest (75+) age groups.

Conclusions: Traditional age standardization by the "direct method" may often be problematic in the analysis of relatively small data sets, particularly if survival is low, a condition often encountered in developing countries. The use of balanced age groups, the recently proposed alternative method, as well as calculation of truncated survival may be particularly helpful in such situations.

NOTI2001: A NEW AND VALID COMPUTER PROGRAMME TO CAPTURE AND TO MANAGE DATA IN TARRAGONA CANCER REGISTRY

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The initial management of data in the Tarragona Cancer Registry is developed by the computer system NOTI2001. This is defined as the set of calculations and algorithms that are applied to initial notifications with the objective of being able to order and to classify them through an established criteria, which leads us to take the best decision on each notification.

This computer programme is fed, annually, with data provided by the sources of information, which depending on the type of their data, send notifications of: inpatient reports, anatomopathology reports (biopsies and cytologies), cases of hospital tumour registries, cases of palliative care units, cases that have received radiotherapy treatment, cases notified the previous year which remained unsolved for the following year and, finally, notifications typed using NOTI2001 visual interface during the year. The already existing cases in the Tarragona Cancer Registry which are registered as alive are joined along with this initial data too. Mortality data is managed later by another external computer application.

All of this collected data is compared with each other and, as a result, the programme generates a series of 'groups'. These are defined as the different notifications for the same patient found using pair-similarity and specific weight calculation methods simultaneously. The programme removes the groups with no useful new information, which correspond to notifications that have entered only from the Tarragona Cancer Registry database. The user is able to make the best decision for every individual group. Even paper cards can be printed to investigate doubtful groups in the hospital medical record department, with the aim of collecting all the information about the case, which helps to make the final decision for the related group. At the end, solved data is exported to the Tarragona Cancer Registry main database, leaving the NOTI2001 system prepared for the next run with data for the following year, starting again with all previous procedures.

Taking a look at the properties of the programme NOTI2001, the most reliable feature is the trazability of data, since at any time of the process, the user is able to identify every notification and its movements inside the programme, from entry to the end of the different operations and data calculations. Trazability is favoured by a well defined quality parameters which are applied to initial data to insure its format and integrity. It allows a minimisation of errors and simplifies the following steps of the process.

PALLIATIVE CARE FOR THE CANCER PATIENT IN AFRICA

Anne Merriman

BREAST CONSERVING SURGERY AND RT IN THE NETHERLANDS

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Background: Breast-conserving surgery (BCS) followed by radiotherapy (RT) is a safe treatment option for patients with T1-tumours (i.e.,.2 cm) and a substantial part of those with T2-tumours (i.e.,2-5cm). This study investigates the use of BCS and RT in these tumours.

Methods: From the Netherlands Cancer Registry patients were selected with invasive pT1 (i.e.,.2.0 cm) or pT2 (i.e.,2.1-5.0cm) tumours, without metastasis at time of diagnosis. Trends in the use of BCS and radiotherapy (RT) were determined for different age groups in the period 1990-2001.

Results: Between 1990 and 2001 54,876 pT1-tumours and 37,721 pT2-tumours were diagnosed. In pT1-tumours % BCS increased from 65% in 1990 to 69% in 2001 in patients <50 years. In patients 50-69 years the % BCS increased from 55% in 1990 to 71% in 2001. In patients >70 years the % BCS increased from 35% in 1990 to 52% in 2001. The % RT increased in patients with BCS toward 90% in all age-groups. The %RT in patients with an amputation decreased to 27% in patients <50 year and to 10% in patients >70 years. In pT2-tumours the % BCS in patients <50 years old stayed constant; 45%. In patients 50-69 years old the % BCS increased from 37% in 1990 to 43% in 2001. In patients >70 years the % BCS stayed 25%. In age-groups <50 and 50-69 the % RT increased to 88%. In patients >70 years the % RT increased from 48% in 1990 to 73% in 2001. The % RT in patients with an amputation decreased to 22% in >70 years.

Conclusion: Patient swish, specialist's belief in the treatment and experiences with local recurrence after BCS can explain the differences between age groups in the appliance of BCS and RT. Multidisciplinary treatment, patient education and specific guidelines could increase BCS combined with RT in all age groups.

REALIZATION OF A POINT-OF-CARE NETWORK FOR BLOOD TESTING IN CANCER MONITORING

Alberto Dolci, Massimo Barberis

POCT are very easy to use systems providing accurate and reliable results on low volume whole blood sample in extremely short turnaround time with no sample preparation after blood drawing. POCT analyzers do not require qualified technical skill for testing samples, they need neither any calibration procedure nor any relevant maintenance action and seem to be ideal for managing laboratory medicine in satellite, even isolated, sites of patient care delivery. POCT results will be used to make clinical decision and take appropriate actions leading to an improved health outcome. There will be some input by laboratory staff in user training or managing quality assessment systems but POCT could be addressed for use to personnel working at sites of health delivery.

Connectivity of POCT devices with main laboratory information technology systems is mandatory, to validate all POCT results. To decentralize laboratory testing is a great opportunity to rise healthcare levels in environments in which hospitals and laboratories are very unfrequent, tipically in developing areas, and by introduction of the web connection the distributed laboratory network remains under the overall management of the existing laboratory service. We suggest to realize a POCT network in order to make suitable, also in areas far from the central laboratory, most clinically relevant blood tests in cancer monitoring. We refer to the experience of MultiMedica hospitals, in which, to manage emergency tests in the hospitals, we introduced 37 POCT systems: 6 blood gas analyzers, 14 coagulometers 3 blood cell counters, 11 cardiac markers detectors and 3 reflectometers for dry chemistry on 8 different sites spread on 3 hospitals, 2 of these sites located into the oncology departments and providing very rapidly all the results of blood testing which highly impact clinical decision and patient outcome. Technological and scientific innovation will introduce soon many new POCT assays.

BRCA1 AND BRCA2 GERMLINE MUTATIONS IN EARLY ONSET AND MALE BREAST CANCER PATIENTS FROM CENTRAL SUDAN

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In Sudanese hospital-based cancer series breast cancer is the leading tumor and tends to occur in premenopausal patients. This suggests an important genetic susceptibility component, that could be linked to the hereditary breast cancer genes BRCA1 and BRCA2. By combined protein truncation test (PTT), denaturing highperformance liquid chromatography (DHPLC) and direct sequencing we analysed the germline mutational spectra of BRCA1 and BRCA2 in a Central Sudanese breast cancer series comprising 1 male and 34 early-onset female ($\leq$ 40 years old) cases characterised with regard to tribe, individual reproductive history, clinical-pathological features and cancer family history. We identified a total of 60 sequence variants, 32 in BRCA1 and 28 in BRCA2, in 33/35 cases (94.3%). Overall 18/60 BRCA1/2 variants (30%) were novel, including 3 of 5 identified truncating mutations. The truncating mutations, 2 in BRCA1 (c.3999delT, c.4065_4068delTCAA) and 3 in BRCA2 (c.3195_3198delTAAT, c.8642_8643insTTTT, c.6406_6407delTT) accounted for 11.8% (4/35) of the female breast cancers patients $\leq$ 40 years, for 18.2% (4/22) of those $\leq$ 36 years and for the only male patient, and were associated with low/no parity and lactation, advanced stage, ductal histology. Overall the data suggest that the impact of BRCA1/2 mutations on early onset Sudanese breast cancer could be high. The unique BRCA1 and BRCA2 mutational signatures, characterized by high frequencies of novel mutations and by variants previously reported in populations from different continents, are consistent with the high genetic diversity and complex population history of the Sudan.

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PATHOLOGIC CHARACTERISTICS OF BREAST CANCER IN SUDAN: COMPARISON BETWEEN A SUDANESE AND AN ITALIAN BREAST CANCER SERIES

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Little is known about the clinical-pathological features of breast cancer in sub-Saharan Africa. Notably in Sudanese hospital-based cancer series breast cancer is in leading position amongst all cancers. We studied available archived paraffin-embedded breast cancer cases (n = 83 samples) diagnosed at the Department of Pathology, Faculty of Medicine, University of Gezira, Wad Medani, Central Sudan between 2001-2002. Tumor characteristics were assessed by expert review and tissue microarray immunohistochemistry for estrogen/progesteron receptors (ER/PR) and p53. The Central Sudanese series was compared to a consecutive series of 780 breast cancer cases collected at a single Italian Institution (Department of Oncology, University of Pisa). Medullary carcinomas were significantly more common in the Sudanese than in the Italian series (10/83, 12% versus 20/780, 3%, P <0.0001) while the frequencies of the ductal, lobular, papillary and mucous histotypes were comparable in the two series. Sudanese breast tumors were more frequently ER/PR negative (P <0.0001) and p53- positive (not significant). In addition the Sudanese series was enriched in male breast tumors (P <0.01). The striking frequency of medullary carcinomas suggests that specific gene-enviroment interactions may be implicated in Sudanese breast cancer, a possibility also supported by the higher impact of male breast tumors. The associations of Sudanese breast cancers with ER/PR-negativity and p53-positivity could be consistent with the aggressive tumor characteristics generally reported for African and African-American breast cancer, but could also reflect later diagnosis and more advanced stage.

INFLUENCE OF FAMILY ENVIRONMENT ON INCIDENCE OF ENDEMIC BURKITT'S LYMPHOMA: A POPULATION-BASED CASE-CONTROL STUDY

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Objective: Endemic Burkitt's lymphoma (eBL) has been linked to early infection with Epstein-Barr virus and exposure to chronic and intense malaria transmission. These two factors, alone, however, do not adequately explain the non-random occurrence of eBL within high-risk regions, suggesting that other factors might be involved. We carried out a population-based case-control study to determine the role of family environment on eBL occurrence and the feasibility of population-based studies in rural and semi-urban sub-Saharan Africa.

Methods: We recruited all incident eBL cases diagnosed at the Nyanza General Provincial hospital in Western Kenya during a six-month period and identified frequency-matched healthy controls through a multistage cluster sampling scheme. We administered a questionnaire to capture demographic and risk behavior patterns, and collected home-based observation data from all study participants.

Results: Between February and July 2004, 34 eBL cases and 91 population-based controls were recruited from Nyanza Province, Kenya. Cases were less likely to have three or more younger siblings, regardless of birth order and tribe (OR = 0.33, 90% CI = 0.16 − 0.94), and female cases were more likely to have at least one deceased parent, independent of tribe (OR = 27.99, 90% CI = 2.21 − 354.91). Water sources and physical home structure were statistically similar for cases and controls. Although we detected relatively large odds ratios for several E. tirucalli variables, the plant was not statistically associated with eBL in our study population.

Conclusion: Certain family characteristics may increase eBL risk through competition for limited resources and poor nutrition, which in turn may decrease immunosurveillance and contribute to eBL progression. We also demonstrated that a population-based study design is feasible for investigating cancer etiology in resource poor communities. We recommend a large population-based case-control study to further investigate the co-factors leading to increased eBL risk in sub-Sahara Africa.

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THE INFLUENCE OF RISK FACTORS ON THE GEOGRAPHICAL VARIATION OF STOMACH CANCER INCIDENCE RATES IN SLOVENIA

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Background: A marked geographic variation in the stomach cancer incidence (more cases in the east of Slovenia) is observed for more then thirty years among 192 Slovenian municipalities. An unequal population distribution of well-known major risk factors typically explains much of the differences in the incidence of stomach cancer

Methods: Stomach cancer new cases were gathered from the population based Cancer Registry of Slovenia for the period 1995-2001. Municipalities' standardized incidence ratios for all stomach cancers and non-cardia stomach cancers were calculated and mapped. A deprivation index was created from basic socioeconomic characteristics of each municipality by applying factor model. A full Bayesian analysis with a conditionally autoregressive prior was preformed using WinBUGS software and the resulting smoothed incidence rates were shown graphically.

Results: The unsmoothed standardised incidence ratios vary from 0 to 4. The extreme values appear mostly in the municipalities with small population size. Spatially smoothed maps of stomach cancer incidence rates by Slovenian municipalities show a clear west-to-east gradient. The gradient is more obvious in the non-cardia maps. This pattern resembles the geographical variation of socioeconomic indices, but these indices are not significant predictors of stomach cancer incidence.

Conclusions: Geographical variation of stomach cancer incidence in Slovenia could be partially explained by the heterogeneous socioeconomic characteristics of its municipalities. By inclusion of additional stomach cancer risk factors data like the prevalence of Helicobacter pylori infection the described geographical gradient would be explained even more in detail.

Poster Presentations

PATTERNS OF SOLID MALIGNANT TUMOURS IN ETHIOPIAN CHILDREN (1994-1998)

Dawit Mihrete (MD) and Girma Ababi (MD)

A retrospective study for the five-year period of 1994-1998 was done to determine the Pattern and Incidence of Solid Malignant Childhood Tumors as seen in the Pathology Department of the Faculty of Medicine, Addis Ababa University, Ethiopia. The 219 cases constitute 6.1 % of the total solid malignant tumors with a crude incidence rate of 1.5 per million Children year. Ages ranged between 2 months and 15 years with a male to female ratio of 1.2.1. Retinoblastoma ranked first (22.8%) followed by Non-Hodgkin Lymphoma (18.3%) and nephroblastoma (13.2%). The findings are compared with report from other developing and developed countries. This baseline data calls for a more intense study so that meaningful and cost effective therapeutic interventions can be planned and developed.

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AN EFFECT OF PSA ERA: INCREASING NUMBER OF BLADDER CANCER DIAGNOSIS

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Introduction: PSA (prostate -specific antigen) measure has remarkably improved prostate cancer detection, and at the present time it represent one of the most important tumour markers in the cancer detection. As a matter of fact, prostate cancer screening resulted in an increased diagnosis and the treatment of prostate cancer. The aim of this paper was to assess whether the higher amount of propstate cancer diagnosis produced also an increase in bladder cancer diagnosis.

Materials and methods: We examined prostate and bladder cancer incidence in Umbria region of Italy over the period 1994-2002. Incidence data was derived from the Umbrian Population Cancer Registry. Prostate and bladder (all neoplasm including non invasive) multiple tumours were considered. We estimated the time between these two diagnoses.

Result: 3885 prostate cancer and 2802 bladder cancer were diagnosed in the Umbria region, during the period 1994-2002. 165 (58 synchronous, 2.1% of incident bladder cancer) out of those cases were prostate and bladder multiple tumour. Within synchronous pairs, the diagnosis of prostate came first 51 time (88%); that is prostate cancer diagnosis precedes a bladder cancer diagnosis much more than expected by chance (p<0.00000).

Conclution: As reported by other , the risk of developing both prostate and bladder cancer seems higher than additive. If we consider synchronous tumour, in most cases the diagnosis of prostate cancer precedes that of a bladder tumour. A likely explanation for this finding is that further ascertainment after positive PSA testing may lead to an incidental diagnosis of bladder cancer. The same mechanism would apply to an undefined quote of cases diagnosed in men with positive PSA test but without a subsequent diagnosis of prostate cancer.

TRENDS OF INCIDENCE AND MORTALITY CANCER IN BRAZIL COMPARISON BETWEEN THE CITIES GOIANIA AND SÃO PAULO

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Background: To evaluate the measures adopted in cancer treatment and diagnosis, Doll suggests analyzing the trends of cancer incidence and mortality. It can give a realistic idea of the results of publics policies in the country for the malignant diseases. In a developing country like, Brazil, where the sources of information are improving data in the last decade, this type of study is rarely done.

Objective: To analyze the trends in cancer incidence and mortality in Goiânia, (Middle-West of Brazil) and in São Paulo (Southwest of Brazil).

Methods: It was analyzed the cases recorded in the Goiânia Cancer Registry (1988-2000) and São Paulo Cancer Registry (1969-2000). It was calculated the standardized rates using a World population proposed by Segi, 1960. The trends were estimated using polynomial regression models.

Results: The trends were similar for both cities. The standardized incidence rates of oesophagus cancer (both sex), stomach (male), colon (both sex), ovary, bladder (both sex) and brain (female) were stable in the period. There was a rising trend in the incidence rates for the total cancer (except skin) (both sex), as well as breast, corpus uteri, prostate and brain (male).Decreasing incidence was observed for stomach (female), cervix cancer and lung (both sex).The mortality rates were stable in this period. There was a rising trend in mortality for all cancer (except skin) (male), prostate cancer and brain (both sex) and a decreasing trend for the mortality rates for lung cancer (male). For female cancer, the mortality rates for oesophagus, stomach cancer and cervix were decreasing.

Conclusion: Those patterns probably show a spread of screening programs in Goiânia and São Paulo and we expected a reduction in mortality rates in the coming years.

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FIRST POPULATION BASED SURVIVAL DATA FROM TURKEY: POPULATION BASED SURVIVAL RATES IN IZMIR FOR SELECTED CANCERS

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Background: Izmir Cancer Registry (ICR) which is the unique population based registry in Turkey has been developed since 1992. At this study, we are presenting first population based survival rates from Turkey. Since we cannot conduct a systematic follow-up procedure for all cases in our registry we executed a collaborative study with IARC from 1 March 2003 – 1 July 2004 for obtaining survival rates for the patiens which have a diagnosis with certain sites at date at 01 Januarry 1995 – 31 December 1997.

Methods: Totally, 4399 cases were included which have diagnosis with one of these sites: colon, rectum, larynx, breast, bladder, cervix uteri, ovarium, lymphomas and leukemias. To know the follow up status of each patient on closing date firstly all incidence cases were matched with death certificates up to 30th September 2003. Then unmatched cases were matched with national population data. The remainings were seeked at the reporting hospitals to determine the patient's date of last visit and patient's vital status. For unmatched cases telephone enquires were made and at last for remaining cases home visits were carried out. Only 0.4% patients did not have any follow up. The completeness of follow up at 5 years from incidence date ranged between 79.1% and 97.8% for various sites. Observed survival was estimated by actuarial method. Expected survival in the general population was estimated by Ederer II method using published UN life tables for Turkey. Relative survival was calculated as the ratio of observed and expected survival and expressed as percentage.

Results: Five–year observed, relative and age standardized survival rates for the sites are as below respectively: colon 44.9%, 52.5%, 53.2%; rectum 44.1%, 50.4%, 51.6%; larynx 62.2%, 70.9%, 68.9%; breast 71.1%, 76.7%, 76.6%; cervix uteri 58.8%, 62.3%, 57.6%; ovary 54.7%, 59.0%, 60.2%; bladder 57.7%, 69.7%, 69.9%. Five year relative survival for Hodgkin's disease (68.9%) was better than NHL (49.5%). Myeloid leukemia and multiple myeloma have poor survival; for lymphoid leukemia it was 51.4%. Generally for all sites women had better survival rates than men with an exception of cancer of rectum.

Conclusion: For all the above sites, the five-year relative survival rates are much better than the relative survival rates observed in most less developed countries and resemble that observed in developed countries. The completeness of follow up is comparable with most less developed countries. Even if Turkey can be categorized among less developed countries, Izmir is one of the developed parts of Turkey and cancer diagnosis and treatment facilities are quite improved in the province. Thus higher survival rates may be justified. Continuation of such studies is warranted and would provide insight into the trend of survival over calendar time.

BEIRA CANCER REGISTRY – MOZAMBIQUE THE FIRST 4 MONTHS

DR. JOSEFO FERRO & MR. HÉLDER RASSOLO

Mozambique is an African developing country in southeast region of the continent, with 18.000.000 inhabitants where the majority is young people. The Registry has started in January 2005 with a team of 3 persons – 1 Pathologist – head of the Registry and 2 registrars. The method used is active. The geographic area covered is Beira city in Central Region of the country (the 2nd city of Mozambique) with 560.000 inhabitants. There is a Central Hospital with facilities for diagnostic of Cancer and can also treat by Chemotherapy and Surgery. The Radiotherapy isn't available. The majority of patients with cancer are refereed to this Hospital.

The Office of the Cancer Registry is located in the Pathology Department of the Central Hospital.

The HIV prevalence of the general population in the city is 26.5% - the highest of the country.

The total of cases is 128, where 71 (55,5%) are male and 57 (45,5%) are female.

The main base of diagnose is Histology with 104 cases (81%), followed by Cytology 14 cases (11%) and 10 (8%) cases had Clinical diagnose only. There aren't cases diagnosed by DCO.

The majority of cases 97 (75,8%) belong to the patients under 50 years.

About morphology we have 69 cases (54%) of Kaposi's sarcoma, 18 cases (14%) of Cervical cancer, 7 cases (5%) of Esophagus (Epidermoid carcinoma), 6 cases (5%) of Lymphoma, 4 cases (3%) of Breast cancer, and the remaining 24 are prostatic cancer, soft tissues sarcoma, conjunctive epidermoid carcinoma, and other morphologies. We conclude that Beira Cancer Registry is already installed and has been supported by the Ministry of Health and the WHO, the National Office. The quality of results is good, with 81% of Histology and without DCO.

Regarding to the morphology the high incidence of Kaposi's sarcoma (more than 50%) is probably related to the high prevalence of HIV in this city.

The high incidence of cervical cancer is related to the absence of screening program for this neoplasia.

HEPATITIS B IMMUNIZATION AND LIVER CANCER IN KOREA

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Liver cancer is one of the three most common causes of cancer mortality in the world. Since hepatocellular carcinoma (HCC) is almost always lethal, the incidence and annual mortality from this tumor are equivalent. Liver is one of the leading sites of malignant neoplasm also in Korea. However, the incidence rate has continued to decrease for the last decade, especially in younger population. About two-thirds of HCC are closely associated with chronic infection with hepatitis B virus (HBV) in developing countries. Korea is one of the countries where HBV infection was endemic in the past; 11.7 % for HBsAg positivity in males, and 9.5 % in females in 1986. However, it has dramatically been declining in the last two decades due to the HBV vaccination program as well as improvements in general health status.

Universal hepatitis B immunization has proved to be effective in reducing the incidence of HCC in children in Taiwan. To control hepatitis B, immunization through HBV vaccination has first been introduced in 1985, and a nationwide vaccination program for neonates was launched in 1995 in Korea. In 10 years, these health policies reduced the HBsAg carrier rate in children from 6~8 % to 2~3 %. Incidence of HCC in children can be considered as an early indicator of the effectiveness of vaccination. With the advent of hepatitis B vaccines and the introduction of routine vaccination of newborns, the incidence of HCC in children, unlike older population, seems to be decreasing markedly over the last decade in Korea. Changes in mortality rate also support the findings in incidence rate. A cohort study has shown that immunization through HBV vaccination in adults reduced the risk of liver cancer in Korea. However, it remains unclear whether the ultimate goal of reducing HBV-induced HCC mortality can be achieved.

IMPACT OF HABITUAL SMOKING ON CANCER STAGE AT DIAGNOSIS BASED ON REGIONAL CANCER REGISTRY DATA FOR AICHI PREFECTURE, JAPAN

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Background: Since 1999, information on smoking habit of cancer patients has been collected by Aichi Cancer Registry. The purpose of this study was to examine the risk impact of habitual smoking on cancer stage at diagnosis by site using the data registered to Aichi Cancer Registry, Japan.

Methods: The study subjects were registered cancer cases aged 20 or more and diagnosed between 1999 and 2003. The relationship between cancer stage at diagnosis (local, regional or metastatic) and smoking history (never or ever) was assessed using simple comparative approach.

Results: A total of 66,400 cancer patients with smoking history and cancer stage at diagnosis were registered up until 2004. Fifty-six percent were male and 44% were female. The mean age was 64 years. Ever smokers had increased risks of regional (odds ratio (OR), 1.27; 95% confidence interval (CI), 1.21 to 1.32; $p<0.001$) and metastatic (OR, 1.30; 95% CI, 1.24 to 1.36; $p<0.001$) disease. An increase in regional disease was most evident for oral & pharynx (OR, 1.38; 95%CI, 1.10-1.73), larynx (OR, 1.66; 95%CI, 1.01-2.73), lung (OR, 1.74; 95%CI, 1.50-2.02), breast (OR, 1.31; 95%CI, 1.12-1.53), and uterus (OR, 1.38; 95%CI, 1.09-1.75) cancers. An increase in metastatic disease was most evident for the lung (OR, 1.46; 95%CI, 1.26-1.69) and breast (OR, 1.80; 95%CI, 1.35-2.40) cancer.

Conclusions: The data for smoking status of cancer patients collected from regional cancer registration can be utilized to evaluate relationships to cancer stage at diagnosis. Ever smoking appears to be a risk factor for advanced cancers in a wide range of body sites.

THE EVALUATION OF THE IMPROVEMENT FOR CANCER SURVIVAL, USING THE METHOD OF AGE AND STAGE ADJUSTED SURVIVAL RATE, OSAKA IN JAPAN

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Background: The cancer survival has been bettered in late years. In order to evaluate the improvement of the survival, considering with the change of the age or stage distribution for the cancer patients, an extended survival analysis was proposed. Applying the model to the data of cancer patients diagnosed between the year 1975 and 1994 in Osaka Cancer Registry, we examined the evaluation to the improvement of cancer survival in stomach, lung and breast.

Methods: Brenner presented the alternative method for age adjusted survival rate in 2004. In that paper, the sparseness of the observed data in the age group was adjusted by individually assigning the age specific weights to all patients in different age groups. We modified this method to adjust the age and stage for the comparisons of cancer patient survival among four periods (1975-79, 1980-84, 1985-89, 1990-94) by individually assigning the age-and-stage group specific weights to all patients. The standard age and stage distribution was set to the distribution of total group of patients diagnosed in 1975-94. We calculated the age and stage adjusted 5-year survival rates (5SR) in each period.

Results & Discussions: The results of the age and stage adjusted 5SR in 1975-79, 1980-84, 1985-89 and 1990-94 of patients with stomach cancer were 20.9%, 32.4%, 43.2% and 49.3%, on the other hand, non-adjusted 5SR were 24.8% 34.8%, 41.4% and 44.9% respectively. In case of lung cancer and the breast cancer, adjusted 5SR by period showed almost the same with those of non-adjusted. The results suggested an improvement of 5SR in stomach cancer considering with the change of age and stage distribution. For the application of this method to the other site or period, the verification would be needed comparing with other methods such as Brenner's method or Cox's regression analysis.

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CURRENT PATTERNS OF LYMPHOMAS IN A TROPICAL COUNTRY: A WHO CLASSIFICATION

Fredrick Kidaaga, Rolf Schmauz, A.C Feller

Classification of malignant lymphomas has often been an enigma particularly in regions where there are diagnostic deficiencies frequently due to lack of advanced studies. Consequent to this, there is lack of knowledge on current trends on lymphomas in most African settings.

This ongoing prospective study endeavors to examine the occurrence of lymphomas in Uganda and harmonize their classification within set World Health Organization parameters. Diagnosis entails morphological, immunohistochemical and molecular studies on formalin fixed paraffin embedded tissues.

Results of available ten cases so far aged between 17 – 66 years show a preponderance of Non-Hodgkin's lymphoma, the majority being of the diffuse large B cell type (60%), while Burkitt's lymphoma accounted for 30% and the 10% consisted of other types. The HIV status of only one patient was known while all the patients with Burkitt's lymphoma are under 18 years.

Though the study is still in its early stages to make a meaningful conclusion, it is worthy to note that Non–Hodgkin's lymphomas of the B-cell line are showing a predominancy.

INCREASING TRENDS OF BREAST CANCER IN KOREA: COHORT EFFECT AND RELATED FACTORS

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Although breast cancer incidence and mortality rates are relatively low in Korea, it has been steadily increasing since 1980s. Percent change in breast cancer mortality between 1985-87 and 1995-97 in women aged 50-74 and 25-49 years were highest in the world. We projected age-adjusted mortality rates up to 2020 using a linear regression model, then breast cancer are expected to increase steeply to 9.07 in 2020 in Korea.

Birth cohort effect was observed in mortality rates among women born in 1946 with 1.2-2.4 fold increase compared to women born in 1936. Risk of breast cancer death was found to increase with age after adjusting for the cohort effect through an age-cohort model.

We performed a largest multi-center case control study in Korea to establish risk factors of breast cancer. Risk was increased by late menopause but reduced by early first birth and larger number of birth. Larger number of breast feeding children decreased breast cancer risk independently (p for trend=0.01). Particularly noteworthy was that protective effect of breastfeeding against breast cancer was apparent when analysis was restricted to the first breastfed child (p trend = 0.04).

Rapid industrialization in Korea resulted in rapid change in lifestyle. Total fertility rate decreased from 4.53 children per fertile Korean woman in 1970 to 1.19 in 2003 meanwhile, age at menarche from 14.6 years in 1960 to 12.5 in 1985. In addition, age at first marriage increased from 21.6 years in 1960 to 27.3 in 2003, which also delays the age at first full-term delivery. All of the changes in lifestyle favor further increase of breast cancer incidence and mortality in Korea. Preventive strategy including changing lifestyle is essential to diminish breast cancer development especially for younger generations.

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THE CHANGE OF THE CURE AND THE MEAN SURVIVAL TIME OF CANCER PATIENTS IN HUKUI, JAPAN

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Background: We investigated the change of the cure rate and the mean survival time for the fatal cases of cancer patients, applying the cure rate model to the data of the Fukui Cancer Registry registered in the period of 1987-96.

Method: The relative survival rates (RSR) up to 5-years for the patient with stomach cancer (n=7,688), colon cancer (n=2,885), rectum cancer (n=1,427), lung cancer (n=3,212) and breast cancer (n=1,608) were calculated by site, sex and the period group (group1: patients who were diagnosed in the year 1987-91, group2: those diagnosed in the year 1992-96).

The cure rate model was applied to these RSRs up to 5 years. In the cure rate model, the total patients group consists of two groups, one is fraction (P) who are to be cured, and the remaining (1-P) are not cured (fatal cases). The survivor function for the entire population, denoted by S (t), for this model is given as follows; S (t)=P+(1-P) W (t). Where W (t) is Weibull distributions. The proportion of the cured group (P) and the parameters of the survival were estimated by non-linear least square method and the mean survival time, T, for the fatal group was calculated by each patient group.

Results & Discussions: The results showed various change of P and T by site and sex. For example, in the patients with lung cancer those were 0.07 and 0.73 in male, 0.15 and 0.90 in female for the group1 and 0.15 and 0.87 in male, 0.18 and 1.43 in female for the group2 respectively. Such increase of P and T would show the improvement of cure rate for the patient group and the prolongation of the prognoses for the fatal cases. The effect of lead time bias or other factors should take into consideration for the further discussion.

IMPACT OF TOBACCO SMOKING, ALCOHOL DRINKING AND BODY MASS INDEX ON TOTAL CANCER RISK IN JAPANESE: ESTIMATION FROM A LARGE-SCALE POPULATION-BASED COHORT STUDY – THE JPHC STUDY

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Although tobacco smoking, alcohol drinking and obesity are considered to be the major risk factors of cancer in many parts of the world, their impact on total cancer risk differs by population. For implementation of practical measures against cancer in a target population, it is useful to estimate the expected effectiveness of the avoidance of these risk factors by calculation of the population-attributable fraction (PAF), in other words the fraction of the population incidence rate of cancer that can be attributed to these risk factors. In this study, we aimed to evaluate the impact of tobacco smoking, alcohol drinking body mass index (BMI) on total cancer risk in Japanese.

The Japan Public Health Center-based prospective Study (JPHC Study) was launched in 1990-1994, and covered 11 public health center areas throughout Japan. We conducted a cohort analysis using 90,000 men and women aged 40-69 in the JPHC study cohort with 10-year follow-up. During 1990-2001, 5,000 cases of cancer were newly diagnosed.

Current smokers presented a significantly increased risk of subsequent cancer occurrence compared with never-smokers, with a hazard ratio (HR) of 1.6 in men and 1.4 in women. The corresponding PAF (%) of total cancer incidence in relation to current and past exposure to tobacco and considered preventable by the avoidance of tobacco smoking was 29% (80,000 cases) in men and 3% (8,000 cases) in women. In men, a positive linear association with increased ethanol intake was noted (HR: 1.2 for 1-299g/week, 1.4 for 300-449g/week, 1.6 for •450g/week), and nearly 13% of cancers among men were due to heavy drinking (•300g/week), to which smoking substantially contributed. In addition, a U-shaped association between BMI and cancer occurrence was observed in men with no risk modification between the BMI levels of 21-30. No marked fluctuation in risk was observed in women. Since only 2% of this population had a BMI •30, compared with 20% with BMI <20, a very low BMI seems to have an impact on total cancer risk in populations with a low average BMI such as Japanese.

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THE RISK ASSESSMENT OF AIR POLLUTION ON LUNG CANCER INCIDENCE USING CANCER REGISTRY DATA AND GEOGRAPHICAL INFORMATION SYSTEM

Mikami H and Murata M

Background: We developed an analysis software of the geographical distribution of cancer patients using geographical information system (GIS) and population-based cancer registry data. In the former meeting held in Beijing we tried to make some risk estimation of environmental pollution along the trunk road and reported that risk of lung cancer incidence increased 2.0 folds higher in 50m zone of trunk roads compared to that of 500m zone in both males and females.

Objective: To evaluate the influences of air pollution on lung cancer development, risk assessment software was developed using the measurements of exhaust gas from diesel engines (suspended particulate matter, SPM) and cancer registry data.

Method: A contour map was created based on the data of location and observed SPM values of air pollution monitoring site in whole area of one city using a spline interpolation method. Lung cancer patients were mapped on the contour map of SPM concentration which was divided into 3 zones, from zone 1 (low concentration) to zone 3 (high concentration). Lung cancer incidence and numbers of expected case of each zone were calculated each zone were calculated using mesh statistics from national census. Risk was obtained from O/E ratio (observed

cases to expected cases) and tested using chi-square test.

Result: The O/E ratio of male lung cancer in zone 1 (low SPM), zone 2 (intermediate SPM), zone 3 (high SPM) were 1.08, 0.88, 1.33(*). The O/E ratio of female in zone 1,2,3 were 0.97, 0.86, 1.54(*). The O/E ratio for both male and female in each zone were 1.05, 0.88(*), 1.40(*) respectively.

(*) indicates statistically significant ($p < 0.05$). We also mapped the out-patients in our hospital from the same resident area and examined the smoking habits but could not find the evidence of disproportion in smokers among the 3 areas.

Discussion: These obtained risks showed the dose-response relation between the air pollution and the lung cancer incidence. The major source of SPM has been considered to be exhaust gas from diesel engines and effective regulations are required especially for the residents along the trunk road. The measurements of SPM used for this time analysis was measured in 1990's. Considering the latent period of developing lung cancer, we have to analyze the previous data (in the era of 1970's to 1980's)

CANCER INCIDENCE IN EASTERN LIBYA: PRELIMINARY RESULT OF THE YEAR 2003

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Background: Benghazi Cancer Registry (BCR) was founded in 2002 and it covers the whole region of Eastern Libya (1,6 million population). Actually BCR is the only population-based cancer registry in Libya.

Methodology: All malignant cases diagnosed during 2003 were collected from different sources of information, including death certificates. Data were also checked through IARCcrgTools software, developed by IARC. All cancer cases were coded using the tenth revision of the International Classification of Diseases (ICD-10). Morphologies were coded according to the International Classification of Diseases for Oncology, second edition (ICD-O 2). The most valid basis of diagnosis for a given cancer case was coded using the recommendations of the European Network of Cancer Registries (ENCR). World standard population was used to calculate age-standardized rates (ASR).

Results: A total of 922 new cancer cases (excluding non-melanomatous skin cancer) were diagnosed in 2003 (last updated January 2005). The incidence rates for all cancers were 60 per 100,000 (crude) and 105 (C.I. 95%: 94.9-114.4) per 100,000 (ASR) for males and 49 (crude) and 85 (C.I. 95%: 76.1-93.9) per 100,000 (ASR) for females. The most common cancers in males were lung (19%), colon and rectum (10%) and bladder cancer (9%). The most common cancers in females were breast (26%), colon and rectum (9%) and uterine (8%). The percentage of cases diagnosed on the basis of histology or citology was 75% in males and 85% in females whereas the proportion of cases registered on the basis of death certificate only was 16% in males and 9% in females. Childhood cancers represents 5% of all cases diagnosed in 2003.

Conclusion: These preliminary results shows that cancer incidence rates in Eastern Libya are similar to the estimation reported by GLOBOCAN 2002 for the whole Libyan country, but there are relevant differences in site distribution. Cancer registry is an essential tool to provide policy makers with reliable data on cancer epidemiology in order to contribute towards the formulation of cancer treatment strategies. As such, regular funding is required to continue this work. The co-operation of the wider medical community should be encouraged in order to ensure the provision of high-quality information.

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MATRIX OF EVALUATION, A TOOL TO ANALYSE QUALITY OF DATA IN A POPULATION BASED CANCER REGISTRY

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Secretaria de Vigilância da Saúde, Ministério da Saúde – Brasília, Distrito Federal, Registro de Câncer de Base Populacional de Goiânia

Introduction: The Population Based Cancer Registries (PBCR), constitute a recognized source of information for monitoring the cancer incidence. Besides the determination of the magnitude of cancer incidence PBCR, supply valuable information on the distribution of the cancer according to age and sex, subsidizing the managers in planning and implementation of programs of prevention, control and attention to the population. The utility of the data is also generated data on trends, morbidity and mortality of cancer allowing to determine the secular behavior, and to identify risk factors in the populations. With the creation of the International Association of Registers of Cancer (IARC) in 1966 methods of collection of data on cancer was standardized and had been developed and stimulated the creation of new PBCR all over the world, making possible the comparison of the data. However, standardized methodologies of evaluation of the PBCR that allow to verify its utility and to subsidize its functions are almost absent. Looking for to verify the quality of the data and the utility of the generated information is limited, for an inexistence of standardized methodologies.

Objectives: To know quality of the data of the PBCRs is essential and verify the acceptability and flexibility to produce update information.

Methods: The evaluation consisted of the detailed description of the registry with collection of referring information its objectives, definition of case, source of data and operational activities; in the second phase the following attributes must be evaluated: simplicity, flexibility, acceptability, opportunity, exhaustivity, representation and utility. The job matrix of evaluation the population based cancer creates quality standard to be implanted.

Discussion: To use, in all the levels, the data and information generated for the PBCR can be a tool to define politics and it constitutes its main goal of this data bank. The systematic evaluation of this system allows to legitimize its utility and to identify, as well as to determine the quality of the data and agility in the discharge and spreading information, conditions necessary to subsidize the decisions makers.

Conclusion: The role of the Health Vigilance Secretary is to supervise these systems of information in cancer to plan future and adequate politics of cancer in Brazil.

THE RATES OF PREINVASIVE AND INVASIVE CARCINOMA OF THE CERVIX IN SOUTH AFRICA: A PRE-SCREENING POLICY CYTOLOGIC SURVEY

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Objectives: The South African Department of Health has committed itself to the implementation of a national cervical screening programme. To evaluate the performance of a cervical screening programme, baseline key indicators are required. The objective of this study was to determine some of these key indicators including rates of high grade squamous intraepithelial lesions (HSIL) (pre-invasive), invasive cervical cancer and cervical smear coverage rates, before implementation.

Design: A descriptive study whereby all public and private sector cytology laboratories in South Africa were asked to submit a copy of all HSIL and invasive cervicovaginal smear reports from 1 July 2001 to 30 June 2002 to the South African National Cancer Registry (NCR), in addition to the total number of cervical smears reported over the same period.

Outcome measures: Occurrence rates of HSIL and invasive malignancies diagnosed on cervical cytology and smear coverage rates

Results: At least 428,815 cervical smears were performed. The smear coverage rate was low, and varied between provinces from 0.7% to 6.6%, with an overall national coverage rate of 3.1%. A total of 6,364 HSIL and 1,688 malignant lesions were diagnosed on cervical cytology. The crude prevalence of HSIL during the study period was 1,484 per 100,000 smears. The age-specific prevalence rates of HSIL increased from about 20 per 100,000 in women aged 20-24 years and peaked at 90 per 100,000 women at ages 30-34 years. The prevalence of malignant lesions was 394 per 100,000 smears. This translates to an age standardized 'screen detected incidence' of 5 per 100,000 women older than 20 years, and a crude 'incidence' of 400 per 100,000 women screened. Given the rate of histologically confirmed ca. cervix is ~34/100,000, it appears coverage is low (some laboratories did not submit data) and a proportion of the cytology is likely to be for diagnostic purposes.

Conclusion: The study demonstrates high rates of HSIL, which emphasize the need for a national cervical screening programme. Whilst the incidence rate of malignant lesions diagnosed on cytology alone are significantly lower than those diagnosed nationally by histology, the high malignancy pick-up rate by screening is in keeping with other countries experiences at the beginning of a program whereby much of the cytology activity is actually diagnostic. By being pathology based, the NCR is able to collect and collate data on both pre-invasive and invasive cervical carcinoma and can form an integral part of any cervical cancer screening programme. However the relevant laboratories need to put data collection and collation systems in place whereby more complete statistics can be generated on a regular basis.

27th Annual Meeting of the International Association of Cancer Registries

THE CANCER REGISTRY OF NIGER

Hassan NOUHOU

The country of Niger covers 1 267 000 sq km, with a population at the latest census in 2001 of 11 606 291 inhabitants. The registry covers the population of Niamey, the capital, with 707 951 inhabitants comprising eight ethnic groups. 90% of the population is Muslim and the other 10% are Christian, animist or other. The economy is based on agriculture and animal farming.

In the 13 years from 1992-2004, 4210 cancer cases have been registered. The number of cases collected annually has not varied much over the years, with the exception of 1992 (first year of registration), 1996 (no financial support) and 2003 (registrar left for training).

The most frequent cancer in males is liver (23.2%), a finding common to other West African cancer registries, for example Mali. Diagnosis is essentially clinical because of a high risk of hemorrhage from liver biopsies. In women, breast cancer is more frequent (22.7%) than cervix cancer (15.03%). This pattern corresponds to that found in the Maghreb and some sub-Saharan African countries such as Burkina Faso and Côte d'Ivoire, as opposed to findings in Mali, Guinea, Uganda and Malawi where cervical cancer is by far the most common cancer among women.

The most frequent cancers in males (after that of the liver) are skin (7.9%), prostate (5.23%), bladder (5.12%). In women ovarian cancer follows breast and cervix (7.7%), then liver (7.58%) and skin (4.43%).

Apart from liver cancer, the majority of diagnoses are based on pathology (50.38%).

HIV ASSOCIATED BURKITT'S LYMPHOMA IN AN ENDEMIC BURKITT'S LYMPHOMA (BL) SETTING

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Background: Increase incidence of BL has been observed in Uganda coincidence with the epidemic of HIV. We compared the clinical presentation, treatment response and outcome of BL in HIV positive and negative children in Uganda.

Methods: Records of children with BL and HIV serostatus information at UCI between 1994-1999 were reviewed. Demographics, clinical features, treatment and survival information were abstracted from medical records and analyzed using SPSS.

Result: There were 90 BL children aged 2 to 15 years with HIV serostatus; 66 were HIV negative and 24 HIV positive. The mean age for HIV positive children was 6.0 years (SD 2.6) and for HIV negative children 7.2 years (SD 3.2). Constitutional symptoms (weight loss, fever and night sweats) were more commonin HIV+. Sixty-five children (72%) had facial tumor, there was no difference between HIV+ and HIV-. Nineteen (79%) HIV+ children and 17 (25.8%) HIV- children had lymphadenopathy (p-value<0.0001). Overall response to treatment was 78% (HIV+ 70%, HIV- 80%). Treatment complications (anemia, neutropenia and thrombocytopenia) were similar in both HIV+ and HIV- groups. Mean survival time was longer in HIV negative children (51 mnts, 95% CI=41-61 mnts) than in HIV positive children 22 mnts, 95% CI=10-33 mnts, p=0.005). Fever, weight loss, lymphadenopathy and positive HIV status were associated with poor survival.

Conclusion: There is no distinct clinical presentation of BL and HIV infection in children in Uganda, an endemic BL area; facial tumor is still the commonest feature. HIV infection significantly reduces survival time in children with BL. Early HIV diagnosis and timely initiation of antiretroviral therapy could improve survival.

COMPLETENESS OF CANCER REGISTRATION IN BIHOR COUNTY

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Background: Bihor Cancer Registry (BCR) is a population-based cancer registry, affiliated member of ENCR and IACR since 2000, with around 1900 new cancer cases annually (population base: about 600 000 inhabitants).

Objective: To assess completeness of cancer registration in Bihor Cancer registry during 1999 – 2003

Methods: Main data quality indicators were computed for the leading sites for new cancer cases, in children and adults, registered in Bihor County:
- Percent of DCN and DCO cases, for each calendar year
- Percent of HV cases, and percent of cases with of diagnosis based on surgery, clinical examination or unknown methods for leading cancer sites, for each calendar year.

The following definitions were used: histological verification (HV)-diagnosis established using histology, cytology or hematology examination, Death Certificate Notification (DCN) – cases first notified via death certificate) and Death Certificate Only (DCO) – cases registered based on information from death certificate alone.

Results: A small but steady quality gain was observed during 1999-2002, when considering %DCN (31.4% to 25.7%) and %DCO (from 26.5% to 23.3%) cases. The gain was practically lost by the end of study period, both for DCN and DCO (29.8% and 26.0% respectively in 2003). Percentage of HV ranged between 54.5% (1999) and 61.1%. (2001). The sites with highest HV rates were for cervix uteri (85.6-92.8%), head and neck (77.0-84.0%) and breast (65.7-75.2%). %HV for prostate cancer lied between 54.5-75.7%. Highest fluctuations were observed for cancers originating in lymphoid and hematopoietic tissues (28.6-77.2%). For about 1 in 2 recorded colorectal cancers HV was available, and about 1 in 3 cases with stomach cancers are HV cases. Lowest % of HV were observed for lung (29.8-42.6%), pancreas (9.3-26.9) and liver cancers (6.9-23.9%).

Conclusions: Interpretations must take into account characteristics of the data analyzed: relatively small number of registered cases and short period of study.

Despite efforts invested and a positive general trend, quality of registration in BCR is still unsatisfactory, with significant time fluctuations of key indicators studied. Quality of registration was sensitive to changes in registry leadership. Under the current passive reporting system in force, the BCR is the only Romanian population-based registry that incorporates such quality assessment in its routine practices. In the absence of methodological and/or regulatory requirements for promoting data quality procedures and standards for district based cancer registries, quality of registration mainly relies on the culture and the internal organization of the registry, thus the human factor being central. Training of registry staff and compliance of public and private health practitioners to the current mandatory reporting requirements should promote adequate practices and higher quality of outputs. Improvements in the methodological and regulatory basis must be made to also include data quality as a key component in population-based cancer registration system in Romania.

References:

D. M. Parkin, et al: Comparability and Quality Control in Cancer Registration, IARC Technical Report No.19, Lyon 1994

D. Esteban, S. Whelan, et al: Manual for Cancer Registry Personnel, IARC Technical Report No. 10, Lyon, 1995

O. M. Jensen, D. M. Parkin, et al: Cancer Registration. Principles and Methods, IARC Scientific Publications, No. 95, Lyon 1991

CANCER REGISTRATION: SEER DATABASE MANAGEMENT SYSTEM (SEER*DMS): A HUMAN EFFORT AIDED BY COMPUTER INFORMATICS TECHNOLOGY

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As the SEER Program evolved, participating registries developed their own software on different hardware platforms. For more efficiency of data operations, SEER has produced a distributed application database management system with common hardware and software which is ready for initial deployment to the first of multiple geographic locations. The SEER*DMS covers many aspects of central cancer registry operations including submission, screening, follow-back, matching, consolidation, follow-up, editing, record requests, reports, system and staff administration, and management tracking functions. Flexibility allows for different matching algorithms used for record linkage with the results ranked from best match to lowest possible match. All records for the same patient can then be consolidated. A pop-up screen shows all records for the same patient. The registrar can then easily examine all of the tumor information (site, morphology, laterality, date of diagnosis, and supporting text) from all records in one table and associate the incoming records to the appropriate primary tumor. Information on the patient set can be updated by comparisons of each incoming record to the patient set or comparisons can be limited to only those fields whose values differ. Edits can be corrected by filling in the correct value or a pull-down menu of possible values with explanations. Errors are highlighted on the screen and when the mouse is drawn over the highlighted data item, the error message appears. Since there may be several facilities where the patient was treated, a computer algorithm was designed to summarize the treatment information and a flag is set if the treatment needs manual review. The treatment review has a pop-up window that shows the summary treatment based on the computer algorithm and then each treatment record is listed below it along with supporting text. The system was built with flexibility to allow for some customization at individual locations in terms of the timing and sequencing of each step in the registry operation process. Benefits of common architecture and software applications include the capacity for remote updating and the ability of registries to easily share newly developed software modules.

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CANCER INCIDENCE TRENDS IN KOREA UP TO 2015

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Background: Cancer incidence rates and trends are a measure of the cancer burden in the general population. This study aimed to examine trends in the age-standardized cancer incidence rates and numbers of cancer incidences up to 2015 for all cancers and 6 most common cancers in Korea.

Methods: For 1993 through 2002, crude incidence rates (CR) and age-standardized incidence rates (ASR) on overall cancer and 6 most common cancers (Stomach, lung, liver, colorectal, female breast, and cervix uteri cancer) were calculated using the National Cancer Incidence database in Korea. Up to 2015, incidence rates and number of cancer incidences were forecasted to using a time series model.

Results: As a consequence of the generally increasing trends in the age-standardized rates, the estimates will be 230,000 cancer cases in 2015, which is almost 132% more than in 2000. the increases in the forecast numbers of cancer cases in 2015 are proportionally larger in males than in females (153% and 113%, respectively). ASR of stomach, lung, colorectal, and female breast cancers will be increased in 2015, but ASR of liver, and cervix uteri cancers will be decreased.

Conclusions: Our forecasts are simple estimates of future cancer incidences. There will be many obstacles to make policy based on these estimates. Furthermore, we will investigate and develop more fitted estimates using ageperiodbirth cohort function.

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INCIDENCE OF SECOND PRIMARY CANCERS IN YAMAGATA, JAPAN

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Objective: To examine trends over time in incidence of second primary cancers in Yamagata, Japan.

Methods: Study subjects were all reported cases who were diagnosed as having a first primary cancer between 1975-95. The follow-up of all cases started at the date of first primary cancer diagnosis and ended at 31 December, 2000. In this study, we followed the IARC/IACR rules to define multiple primary cancers. Confidence intervals for the incidence rate were estimated using the Poisson assumption. Sex-specific incidence rate of metachronous second primary cancers were estimated according to sex, age, period of first cancer diagnosis and time since first cancer diagnosis. We used the Poisson regression model to estimate the incidence rate ratios of metachronous second primary cancers accounting for possible relating factors.

Results: For the male cases there were 1,880 second primary cancers diagnosed among 41,076 first primary cancer cases during 180,178 person-years (the mean follow-up period was 4.4 years) and for the female cases there were 973 second primary cancers diagnosed among 31,227 first primary cancer cases during 174,377 person-years (the mean follow-up period was 5.6 years). Incidence of metachronous second primary cancers increased in the later years. The incidence rate for the male cases diagnosed as having a first primary cancer between 1991-1995 was 4.1 times higher than that for the cases diagnosed between 1975-1980.

Conclusions: The incidence rate of second primary cancers was obviously increasing in Yamagata, Japan.

NATION-WIDE CANCER INCIDENCE IN KOREA 1999 – 2001

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Background: Cancer incidence rates around 1995 in Korea were estimated using the data from 4 regional cancer registries in vol. VIII of CI5 in 2002. The first national population-based registry using the hospital-based, nation-wide recording system and all the regional cancer registries provided the source to obtain national cancer incidence for the period 1999-2001.

Methods: The Korea Central Cancer Registry identifies incident cases in the whole country through the nation-wide hospital discharge recording system that has been in place since 1980. Records of the same case are identified through a personal identification number and the usual identification variables. Death certificates are the only other routine source of information. Deaths from cancer are included as new cases if they are not matched to existing records. The hospital-discharge database covers all general hospitals in the countries that are equipped with a histo-pathology laboratory. The collection of information is largely passive. The regional cancer registries combine passive and active data collection. Active review of medical records is performed to clarify the definition of the tumour or the identification of the case and therefore the date of incidence. Clinical information is actively sought for cancer deaths not matched to known cases. Age-standardized rates per 100,000 population by sex were calculated based on 18 age groups (0-4, 5-9, 10-14, every five year, 85 years and over) and standardized on the world population.

Results: The overall crude incidence rates (CR) were 247.3 and 188.3 per 100,000 for males and females and the overall age-standardized incidence rates (ASR) were 281.2 and 160.3 per 100,000, respectively. Among males, five leading primary cancer sites were stomach (CR 58.6, ASR 65.6), lung (CR 42.1, ASR 50.9), liver (CR 41.9, ASR 44.9), colon and rectum (CR 24.2, ASR 27.3) and bladder (CR 7.7, ASR 9.2). Among females, most common cancer was stomach (CR 30.8, ASR 25.8), followed by breast (CR 25.7, ASR 21.7), colon and rectum (CR 19.6, ASR 16.7), uterine cervix (CR 18.4, ASR 15.5), and lung (CR 15.1, ASR 12.4). The percent of death certificate only was 7.6% for males, 7.4% for females, respectively.

Conclusions: This is the first attempt to calculate national cancer incidence. The comparison with the regional registries proves that the estimated rates, are sufficiently reliable as a basis to develop the national cancer control programme.

THE TREND IN FEMALE CANCER INCIDENCE BETWEEN 1993-2001 IN SEOUL, KOREA

Myung-Hee Shin, Yoon-Ok Ahn

Study Object: Korea has experienced rapid change in health behavior and lifestyle pattern during the last decade. Unlike other steady countries, this rapid change might have had substantial impact on the characteristics of cancer incidences. Westernization of diet (more meat, less vegetable), less activity, late marriage, less childbirth, more cancer screening are some of the changes that we experienced, especially among women. We calculated female cancer incidences during 1993-2001 in Seoul, Korea, to see if there have been actual changes in cancer incidence, in total or by site.

Method: We calculated average crude rates, age specific rates, and age-standardized rates (ASR) of female cancers during 1993-1997 and 1998-2001. We calculated the incidence for breast, cervix uteri, uterine corpus, and ovary cancer. We also calculated annual incidence from 1993 to 2001.

Result: The crude rate of female cancer incidence of 1998-2001 period was higher than that of 1993-1997 period (190.8/100,000 vs. 164.7/100,000) but ASR was almost the same (176.1/100,000 vs. 172.9/100,000). Female cancers which were more common in younger ages in Korea, such as breast, thyroid, and uterine corpus cancer increased in ASR, whereas cancers which were more common in older ages, such as stomach and cervix uteri cancer, decreased. For breast cancer, age-adjusted incidence increased annually, from 20.8 during 1993-1997 period to 25.7 during 1998-2001 period (22.0, 25.7, 24.8, and 29.8 in each increasing year). The mortality increase was more subtle, and the rate was 4.3, 4.9, 5.0, and 4.5 in 1998, 1999, 2000, and 2001, respectively. The ASR for cervix uteri cancer decreased from 22.3 during 1993-1997 to 17.2 during 1998-2001 (18.2, 17.6, 16.0, and 17.0 in each increasing year). The age-adjusted incidence for thyroid cancer increased from 8.5 during 1993-1997 to 12.0 during 1998-2001 (9.6, 10.6, 11.7, and 16.0 in each increasing year). Cancer incidence of corpus uteri and ovary also increased. The increase incidence of the breast, corpus uteri, and thyroid cancer can be explained by the cultural behavioral changes. However, increasing number of female cancer screening (especially thyroid sonography) would more likely be the cause of this rapid incidence increase.

Conclusion: Although overall cancer incidence in Korean women has not been changed during last 10 years, specific cancer incidences have been changed substantially. Incidences of breast, thyroid, uterine corpus, and ovary cancer have increased, while incidences of cervix uteri and stomach (both male and female) have decreased.

IACR2005

OESOPHAGUS RESECTION IN A GENERAL HOSPITAL, THE NETHERLANDS

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Oesophagus resection is a large surgical procedure with a lot of complications and hospital-mortality between 3 and 8% has been described. Lowest mortality was achieved in large volume specialised hospitals.

The aim of this study was to describe the complications and (hospital-) mortality of patients with an oesophagus resection in a general hospital (Twenteborg) in which the surgeon has had his training in a large volume hospital.

Between 1996 and 2004 all patients with an oesophagus resection in the Twenteborg hospital have been selected from the cancer registration of the CCCST. Data were gathered concerning operation technique (transhiatal versus thoracotomy), resection radicality (IUAC-rules), type of reconstruction of the oesophagus, duration of the operation, complications, and hospital-mortality.

In the study period 51 patients under went an oesophagus resection, of which 34 had an oesophagus carcinoma and 17 a carcinoma of the cardia. More than 90% was an adenocarcinoma. More than 60% was stage III or higher. About one third ofthe patients was more than 70 years old at time of the resection. Halfofthe patients had co-morbidity (ASA $\geq$ 3). 47 resections were transhiatal and 4 through a thoracotomy.

Mean duration of the resection was 4 hours and curative in almost 90%. For all patients a feeding jejunostomy was applied. In 9 patients a spleen-extirpation was needed. Mean IC staywas 6 days and mean hospital stay was 3 weeks. One patient needed re-intervention. Two patients died within the hospital (hospital mortality of 3,9%). The two year survival was almost 50%.

Oesophagus resection is complexsurgery. Stage of the tumour is of importance as is the (post) operative care. Volume of the hospital is less important than the local expertise. Ones a surgeon is trained with sufficient numbers ofresections,complications and mortalitycan also be low in a general hospital.

BASELINE SURVEY OF THE CURRENT ACTIVITIES OF POPULATION-BASED CANCER REGISTRIES IN JAPAN

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Background: Despite considerable effort by relevant authorities, data completeness of population-based cancer registries in Japan remains low. This is because most cancer registries are run by local (prefectural) governments on a voluntary-basis, and there has been almost no active commitment from the national government. In 2004, the Third-Term Comprehensive Ten-Year Strategy for Cancer Control was launched by the national government, targeting a drastic reduction in cancer incidence and mortality rates. In this context, it is recognized that establishing a system for monitoring cancer incidence trends at a nation level is urgently required.

Methods: In July 2004, a questionnaire survey was conducted on all 47 prefectural governments to investigate the current activities of population-based cancer registries. The research group (P.I.: Sobue T)* funded by the above strategy aimed to establish standards and objectives to be achieved during the next 10 years. The questionnaire conducted on prefectural governments investigated the current status of the following 8 items; (1) Legislative Authority, (2) Data Content and Format, (3) Data Completeness, (4) Data Timeliness, (5) Data Quality, (6) Follow-up, (7) Annual Reporting, and (8) Data Use.

Results: Of 47 prefectures, 34 prefectures responded that prefecture-wide population-based cancer registries were currently operated. The main findings regarding the above 8 points were as follows. (1) The official approval process had been completed for 68% (23 of 34) of registries. (2) Of the 12 items required by the National Cancer Center for incidence monitoring data at the national level, 41% of registries could submit all 12 items. (3) The percentage of registries with an I/M ratio of greater than 1.75, DCN% of less than 29% and DCO% of less than 19%, were 24%, 21%, and 24%, respectively. (4) The latest incidence data available was year 2000 or later at the time of survey (3.5 years delay or less) for 83% of registries. (5) An error check system was in operation at 65% of registries. (6) Follow-up of registered cases was conducted by 47% of registries. (7) Annual reports were issued by 88% of registries. (8) A process for using data for research purposes was established in 79% of registries.

Conclusion: Survey data further indicated that data completeness was low for population-based cancer registries in Japan, in terms I/M ratio and DCN%. Based on these findings, 15 registries with relatively high-level activity were selected for the collection of incidence data for monitoring at the national level. To improve data completeness and promote standardization of the registration process, further efforts by the Third-Term Comprehensive Ten-Year Strategy for Cancer Control are required throughout the next decade.

(* The research group participants: Ajiki W, Tsukuma H, Matsuda T, Shibata A, Mikami H, Okamoto N, Soda M, Katayama H, Nishi N, Nishino Y, Ito H)

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SURVIVAL RATE OF MULTIPLE PRIMARY CANCER - COMPARISON WITH SURVIVAL RATE OF SINGLE CANCER

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Background: In calculating survival rates of cancer patients, second primary cancer cases are normally excluded from analyses because the first primary cancer affects the prognosis of the patient. However, first primary cancer with subsequent cancers is included in analyses in spite of the possibility that second primary cancer could affect the prognosis of the patient. With a view to studying the effects of the second primary cancer on the prognosis of the patient, the survival rate of the first primary cancer of multiple primary cancers was compared with the survival rate of single cancer.

Subjects and methods: Colorectal, lung, and breast cancers and cancers of all sites combined diagnosed between 1985 and 1988 in Nagasaki, Japan were divided into two groups, 1) single cancer (SC), and 2) the first primary cancer (FPC) of multiple primary cancers, and their 15-year relative survival rates were calculated. Death certificate only cases were excluded from the analysis. The observation period was from 1985 through 2003. The measured survival rates were obtained by means of the life table method. The expected survival rates were calculated by means of the Ederer II method using the Japanese life table.

Results: The cases analyzed were 18,424 SC cases and 1,941 FPC cases for all sites combined, 2,256 SC and 359 FPC for colorectal cancer, 2,180 SC and 142 FPC for lung cancer, and 953 SC and 97 FPC for breast cancer. The 5-year, 10-year, and 15-year relative survival rates for SC were 44.6±0.4, 41.4±0.5, 42.3±0.5, respectively, and 78.4±1.2, 65.8±1.6, 47.8±1.8 for FPC, respectively, for all sites combined. On colorectal cancer, the rates for SC were 55.0±1.2, 52.8±1.4, 55.9±1.7, respectively, and those for FPC were 82.8±2.8, 73.2±3.7, 54.7±4.3, respectively. On lung cancer, the rates for SC were 16.7±0.9, 13.4±0.9, 13.8±1.0, respectively, and those for FPC were 46.0± 4.9, 33.5±5.1, 23.1±5.2, respectively. On breast cancer, the rates for SC were 83.8±1.4, 77.7±1.7, 78.3±1.9, respectively, and those for FPC were 94.3±3.3, 77.1±5.4, 56.4±6.4, respectively.

Discussion: The relative survival rates for all SC started showing less difference compared with the general population after a certain time had elapsed, whereas those for all FPC showed a continuous decrease. It was considered in calculating survival rates of cancer patients, that FPC cases should be censored at the time of diagnosis of second primary cancer.

CANCER SURVIVAL IN KOREA, 1995-2001

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Background: Cancer death is the leading cause of death in Korea since 1980s and incidence of cancer is increasing every year. Therefore survival rate for patient with cancer is a big issue in Korea.

Objectives: To compute 5-year relative and observed survival for cancer patients diagnosed from 1995-2001.

Method: The data in this study based on the National Cancer Incidence Database. The cancer patients who were diagnosed during 1995-2001 were considered and vital status was followed up until 31 December 2003. In this study, cancers was classified according to the International Classification of Diseases, 10th revision (ICD-10). The 5-year observed survival and relative survival rates were calculated using Hakulinen's method.

Results: A total of 562,356 new cancer cases were registered in National Cancer Incidence Database during 1995-2001. Overall relative survival were 35.6% in males, 55.5% in females. In male, 5-year survival rates were less than 20% for cancer of pancreas (7.2%), lung (11.9%), liver (12.7%), esophagus (14.5%), multiple myeloma (17.9%), the highest 5-year relative survival rate was observed for testis (89.6%). In female, 5-year relative survival rates for pancreas (7.8%), liver (14.2%), lung (16.4%), gallbladder (19.2%) were less than 20% and thyroid gland (95.4%) is the highest. Survival rates of females were higher than those of males for the others except stomach, colon and rectum, gallbladder, larynx, and bladder.

Conclusion: Overall survival were increasing slightly during 1995-2001. Assessing the relative contribution of changes in disease detection, classification, and treatment is required to interpret temporal survival changes properly.

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FNAB DIAGNOSIS OF BURKITT'S LYMPHOMA IN PAEDIATRIC PRACTICE

Prof. Ariel Columbie, Dr. Ssendi – Bwogi

Department of Pathology, Mbarara University

Of the 66 cases diagnosed as Burkitt's lympoma by FNAB over the period 2001-2004, the provisional clinical diagnosis was Burkitt's lymphoma in only 56.2%. The other provisional diagnoses being lymphoma, tumor, neuroblastoma e.t.c. Histological confirmation was obtained of all the cases. The males were more affected than the females, mostly the 6-10 year age group. These masses were located in maxilla, lymphnode, orbit, abdomen and joints. The sensitivity and specificity were a hundred percent.

FNAB is a fast and safe diagnostic aid in Burkitt's lymphoma management.

FNAB DIAGNOSIS OF PALPABLE HEPATIC MASSES

Prof. Ariel Columbie
Dr. Ssendi – Bwogi

Department of Pathology, Mbarara University

This is a Retrospective study by FNAB of hepatic disease done in 2002. Of the 100 studies done on abdominal masses, 40% were hepatic tumours of which 18 (45%) were primary hepatic tumours, 8 (20%) were metastatic, 7 cases (17.5%) were lymphoproliferative lesion, while the others were hepatic cirrhosis and tuberculous hepatitis.

FNAB is very useful, safe and convenient in the diagnosis of hepatic disease. In this study, a sensitivity of 90% and specificity of 96% were obtained.

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EXTRA MEDULLARY HAEMOPOIESIS IN PRIMARY MYELOFIBROSIS DIAGNOSIED BY FNAB

Prof. Ariel Columbie
Dr. Ssendi-Bwogi

A 66 years old man, who was admitted with malaise and fever, revealed on examination anaemia, moderate hepatomegaly, giant splenomegaly and lymphnode enlargement with Hb 8gdl-I , WBC-count 20x19/l and ESR 35mm/hr. He was investigated for lymphoproliferative disease. FNAB showed a polymorphous lymphoid population, occasional megakeryocytes and myeloid precursors. A diagnosis of Extra medullalry Haemopoiesis was made which was confirmed with lymphnode excision biopsy and bone marrow biopsy.

PATTERNS OF LOWER GASTROINTESTINAL TRACT NEOPLASMS, IN ETHIOPIAN TEACHING HOSPITAL, TIKUR ANBESSA HOSPITAL, DEPARTMENT OF PATHOLOGY (JAN. 2001- DEC. 2004)

Kassahun Raya (MD) and Mihrete W/Tinsae (MD)

Carcinomas of the colon and rectum are the second common cause of cancer-related deaths in industrialized countries just falling behind lung cancer. It is relatively uncommon in Africa with geographic, ethnic and socioeconomic incidence differences. The magnitude and distributions of the lower gastrointestinal neoplasms are not very well studied in our country (Ethiopia). The objective of this review is to study the age, sex distribution of the lower gastrointestinal neoplasms. This study was done at Tikur Anbessa Hospital (TAH), department of pathology, Addis Ababa University. Biopsy reports were reviewed retrospectively from Jan 2001 to Dec 2004. The data was colleted, tabulated, classified and analyzed emphasizing on histologic type, anatomic location, age and sex distribution. Lower gastrointestinal tract malignancies were the leading gastrointestinal cancers accounting for over 50% of the gastrointestinal cancers followed by esophageal carcinomas which accounts for 26% of the gastrointestinal cancers. Carcinomas are the major histologic types accounting for 91% of lower gastrointestinal malignancies. 67.3% of the carcinoma are localized in the rectum while 32.7% are located in the colon. In both sites males predominate over the females with an average male to female ration of 1.5:1. The Mean and median ages of large bowel malignancies are 44 and 45 years respectively comparable with reports of the findings of the lower gastrointestinal tract malignancies of other developing countries.

TRENDS IN BREAST CANCER IN THE NETHERLANDS SINCE THE START OF THE NATIONAL SCREENING PROGRAM (1989-2001)

van Dijck J.A.A.M.,

Association of Comprehensive Cancer Registries, Netherlands Cancer Registry

In 1989, the Dutch national screening program for breast cancer was initiated. Women aged 50-69 years, and since 1999 50-74 years, are biennially invited for one-view mammography. In 1996, the entire country was covered. Trends in the incidence of breast cancer by age and stage, and of breast cancer mortality are described for the period 1989-2001.

The Netherlands Cancer Registry provided data on incidence, stage (TNM) and age of breast cancer cases. Mortality and population data were provided by Statistics Netherlands. Age-standardized incidence and mortality ratios were calculated (European Standardized Rate, ESR). Trends were analyzed using the Estimated Annual Percentage Change (EAPC).

The incidence of invasive breast cancer increased 20 from 99.9 in 1989 to 126.4 per 100,000 person years in 2001, and of in situ breast cancer from 4.9 to 13.3 per 100,000. In all age categories, the incidence of invasive and in situ breast cancer increased significantly (0-49 yrs: EAPC = 1.1% and 4.7%; 50-69 yrs: EAPC = 1.6% and 9.9%; 70+ yrs EPAC = 1.6% and 9.9%; all p-values < 0.00). The EAPC was 3.8% (p=0.00) for stage I, 1.0% (p=0.01) for stage II, and -1.4% for stages III and IV. Breast cancer mortality decreased by 15% (EAPC=-1.2%; p=0.00) from 39.0 to 33.1 per 100,000 person years. The decrease was largest for ages 50-69 years. The simultaneous increase in early stages and decrease in late stages of breast cancer are suggestive for an effect of the screening program. However, increased awareness and improved diagnostic methods may also have played a role. The increase in the incidence is also present in the most recent years, which may be indicative of over diagnosis. The decrease in breast cancer mortality is also indicative for an effect of the screening program, although other factors, such as improved treatment results, may also have played a role.

DES-EXPOSURE IN PATIENTS WITH CLEAR CELL ADENOCARCINOMA OF THE VAGINA AND CERVIX IN THE NETHERLANDS

J van Dijck, H. Bulten, A. Hanselaar, B Kiemeney, L Massuger, J Verloop

In 1971 it became clear that exposure in uteri to the synthetic hormone diëthylstilbestrol (DES) may cause clear cell cause clear cell adenocarcinoma (CCAC) of the vagina and cervix uteri. In the Netherlands, the drug was prescribed to pregnant women to prevent miscarriage from 1947 -1975. The Central Netherlands Registry (CNR) of CCAC is one of very few population-based registries with information on DES-exposure. In this study, incidence according to DES-exposure is analysed.

The CNR was started in 1985. Cases with CCAC of the vagina and cervix were identified by PALGA, a nationwide registry of histo- and cytopathology in the Netherlands. Recently, the Netherlands Cancer Registry notified new cases. Histological diagnosis was reviewed. Medical information was extracted from the medical files and DESexposure was obtained by a question-naire.

The registry contained 123 patients born between 1947 - 1980. Year of diagnosis ranged from 1969 - 2001. The registry seemed incomplete up to 1980 and in 2001. From 1981 to 2000 5.8 cases per year were diagnosed (range 3-9). The number of cases per birth year was highest from 1959 to 1963. DES-exposure was known for 102 patients. 70 had (probably) been exposed, 32 had (probably) not been exposed. The age of exposed patients ranged from 14 - 41 (mean 24) years and of non-exposed patients from 18 - 49 (mean 29) years (wilcoxon: p=0.00). Overall 5-year survival was 77% and differed by tumour stage. DES-positive patients seemed to have a better survival. DES-exposure in uteri increases the incidence of CCAC. Moreover, the age at diagnosis is younger for exposed women. Since DES was not used after 1975, a decrease in the incidence of CCAC is expected. However, it is unknown whether DES may also increase the inci-dence of CCAC after menopause. This is an important research question for the next decade.

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THE INCIDENCE AND HISTOLOGIC PATTERN OF INVASIVE CERVICAL SQUAMOUS CELL CARCINOMA IN ETHIOPIA, TIKUR ANBESSA HOSPITAL (2002-2004)

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In spite of the recent decrease in the incidence of cervical squamous cell carcinoma (SCC) in developed countries the advent of the HIV/AIDS epidemic has a negative effect. This effect is expected to be sever in countries like Ethiopia with high rates of HIV infection. We studied the incidence and pattern of cervical SCC among the top 3 malignancies during 3 years period. Within this period cervical SCC accounted for 20% of all malignancies followed by breast (10.8%) and lymphomas (9.8%). There was no change in the high incidence age group (40-60 years) compared to the pre AIDS era. The youngest patient was 20 years and the oldest was 82 years of age. Median age was 46.5 years and mode was 50 years. The commonest histologic grade was well differentiated squamous cell carcinoma.

PREVALENCE OF CANCER IN THE TWO TEACHING HOSPITALS OF RWANDA

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We report a retrospective study realized with the aim of measuring the frequency of cancers in the teaching hospitals of Rwanda as well as in the anatomic pathology laboratory of the teaching hospital of Butare during the period 2000 to 2004.

942 cancers cases were histologically confirmed in the department of anatomic pathology among 4517 analysed specimens.

In the teaching hospitals, 2517 patients with clinical suspicion of cancer were included in our study. Only 759 (30.1%) of cancer suspicions were histologically verified.

54.4% of the diagnosed cancers arise at female subjects. The average age is 44.9 years. The main cancers of men are stomach (16.4%), Kaposi sarcoma (11.5%), liver (10.1%) and non-Hodgkin lymphomas (9.1%). In women, cervix (27.3%), breast (10.5%) and stomach (8.8%) are most frequent cancers. Children under 15 years old presented 7.7% of the total cases of malignancy; the most frequent childhood cancers are non-Hodgkin lymphomas (33.15%) and nephroblastomas (9.84%).

As the prevalence of HIV/AIDS infection is increasing in Rwanda, AIDS define malignancies are frequently observed. The frequency of the malignant tumors observed in the anatomic pathology laboratory does not represent the reality of malignancy in Rwanda as the majority of diagnosed tumors concern easily accessible sites as there is lack of means of exploration like ultrasound or CT scan combined with biopsy.

To the rank of the suggestions, the implementation of a cancer registry in Rwanda appears as an effective tool for the epidemiological cancer control of this affection.

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SURVIVAL OF CERVIX CANCER PATIENTS IN HARARE, ZIMBABWE, 1995-1997

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The study describes the survival experience of 284 patients with cancer of the cervix uteri registered by the population-based Zimbabwe National Cancer Registry in 1995-1997. The vital status of the subjects was established by linkage with death certificates and by retrieval of patient files from medical records department. Untraced patients were contacted at home. Of the 28 patients, 177 (62.3%) were dead and 76 (26.8%) were alive at the closing date of the study (31 December 1999), with only 31 cases (10.9%) lost to follow-up.

Overall observed and relative survival at 3 years were 44.2% and 45.2%, respectively. Half of the cases (139) had been referred and treated in the radiotherapy department. Survival was significantly greater in the first 3 years for patients who received radiotherapy treatment compared to those that did not, but this difference had disappeared by the fourth year of follow-up. Many cases presented late (distant metastasis), and extent of disease was an important determinant of survival: cases with metastases had a risk of death some 3 times that of patients with localized disease. The results demonstrate the importance of earlier diagnosis and availability of effective treatment in the African context.

THE CHALLENGES IN ESTABLISHING A POPULATION BASED CANCER REGISTRY IN SOUTH AFRICA

Ms Patsy de Lora and Mr Joel Perry

Cancer Association of South Africa, Cape Town, South Africa

This paper is based on literature research and personal experiences. The goal of the presentation is to share the challenges and processes the City of Cape Town Cancer Registry are facing to establish the first urban population based cancer registry in the Western Cape Province of South Africa.

Accurate and reliable cancer data are lacking in South Africa. The Western Cape Province currently relies on the National Cancer Registry for cancer data, which can not distinguished cancer incidence, prevalence and survival rates geographically. The need to address this problem was through the establishment of the City of Cape Town Cancer Registry in 2003. The main objective of the registry is to determine the incidence of cancer in the selected health districts of the City of Cape Town, covering a population size of 1.84 million.

One of the major challenges for the registry is the ethical approval at various ethics committees in our catchment area. Additional, are the confidentiality factor since cancer is a non notifiable disease in South Africa.

It is therefore a learning curve to South Africa and the ultimate success of registry would make it all worthwhile.

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HIV AND INVASIVE CERVICAL CARCINOMA: PRELIMINARY RESULTS FROM A HOSPITAL BASED CASE-CONTROL STUDY IN UGANDA

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Background: Cervical cancer is one of the commonest neoplasms that affect women with particularly high rates in Africa. While the association of Kaposi's sarcoma and HIV has been proven worldwide, the increased risk of HIV positive women for cervical cancer appears less evident in sub Saharan Africa despite the high prevalence of HIV and cervical cancer in the region.

Aims: The aim of the study is to assess the association between HIV infection and invasive cervical carcinoma.

Subjects and Methods: This is an ongoing hospital based case-control study being conducted in Mulago Hospital which is the national referral and teaching hospital for the Faculty of Medicine, Makerere University in Kampala, Uganda. Cases are being recruited among women admitted to the Gynaecological unit and control women are recruited among those visiting or attending to cervical cancer patients. Data is being entered and stored using SPSS software. Preliminary analysis was done including only the first cases and controls recruited up to May 2005.

Preliminary Results: There were 56 cases and 73 controls aged 50 years or less enrolled into the study, and the HIV status was available for 55 cases and 72 controls. Eight controls were aged less than 20 years while there were no cases aged less than 20 years. 16 cases and 12 controls were HIV positive giving a crude Odds Ratio of 2.05 (95% CI 0.81-5.23, p-ve=0.094). The age adjusted Odds Ratio was 2.58 (95% CI 1.47-9.82, p-ve=0.40).

Conclusion: These preliminary data suggests that there may be an association between HIV infection and cervical cancer. A definite conclusion can be given when more cases and controls are analysed.

BREAST CANCER AWARENESS AND SCREENING IN DAR ES SALAAM TANZANIA

Njelekela Marina, Magandi Juliet, Mkondya Ellen, Makia Merida, Ngilloi Petronilla, Kasesela Subilaga

on behalf of the Medical Women Association of Tanzania (MEWATA)

Introduction: The Medical Women Association of Tanzania (MEWATA) conducted massive breast cancer and awareness and screening campaign in Dar es salaam for two days 5th and 6th March 2005.

Objectives: The main objective of the activity was to raise awareness among the general population in particular women on breast cancer in a low resource are and to conduct breast clinical examination for women residing in the city of Dar es salaam.

Setting: Municipal hospitals in three districts of Dar es salaam, named Temeke, Ilala and Kinondoni and at the Ocean Road Cancer Institute

Methods: Through the mass media campaigns women residing in the city of Dar es salaam were invited to participate. Girls and women who would manage to attend were encouraged to attend.

Results: A total of 7259 women responded to our call and attended the screening activity. Mean age was 35 years with the youngest participants being 8 years and oldest being 80 years old. Out of those who participated 757 (10.4%) women were found to have various forms of breast diseases. A special clinic was set to attend these women to arrive at adiagnosis of their problems. 543 (71.7%) attended this special clinic and for a span of 10 weeks 321 (59%) women underwent lumpectomies. Mammography or echomammography was done to 55 (10%) of women and Fine Needle Aspiration Cytology (FNAC) was performed to 94 (17%) of women. Out of those women who completed the investigations 46 (0.63%) were diagnosed to have invasive carsinoma of the breast. 288 (3.96%) had benign lesions the majority being fibroadenomas. Breast infections such as breast abscess, mastitis non specific as well as tuberculous were also found.

Conclusion: Invasive breast cancer is now emerging rapidly in urban areas in Tanzania. This may be attributed to lifestyle changes as Tanzania enters the era of globalization.

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RESPONSE TO TREATMENT AND SURVIVAL OF CHILDREN WITH KAPOSI'S SARCOMA

Banura C, Orem J, Bitamazire E, Weiderpass E, Whalen CC, Remick SC and Katongole-Mbidde E

Introduction: Kaposi sarcoma in children – endemic or epidemic - is an aggressive disease with poor response to treatment and poor survival in Africa.

Objective: To document response to treatment and survival of children with KS at the Uganda Cancer Institute.

Methods: Medical records data abstraction by standardized form of 67 children below age 15 diagnosed with KS and treated with chemotherapy between January 1995 and December 2001. We defined Complete remission (CR) as absence of any detectable disease, including tumor-associated edema persisting for at least 4 weeks; Partial remission (PR) as 50% or greater reduction in the number and/or size of previously existing lesions for at least 4 weeks without appearance of new lesions at any site or worsening of tumor-associated edema; Non response (NR) as an increase of 25% or more in size of previously existing lesions and/or appearance of new sites of disease and/ or a change in the character of 25% or more of the skin or oral lesions from macular to plaque-like or nodular. Survival was defined as status of the patient from day one of therapy to date of last follow-up.

Results:

Of the 67 patients with KS:

- 11 had endemic and 56 epidemic KS;
- 42 were boys (mean age 7, range 2-14) and 25 girls (mean age 5.4,range 1-13);
- 38 had advanced disease,
- 18 achieved CR, 32 PR, and 14 did not respond to treatment.
- The median survival for patients with endemic KS was 7 months (range 1-93 months) and for epidemic KS 6 months (range 1-48)

Conclusion: The overall CR rate is low. However, chemotherapy relieved symptoms and improved the quality of life of children who achieved PR. Chemotherapy treatment did not improve survival.

CHALLENGES AND PROSPECTS OF CANCER REGISTRATION IN A DEVELOPING COUNTRY. THE CASE OF YAOUNDE, CAMEROON

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Yaounde Cancer Registry, Cameroon

The Yaounde population cancer registry is charged with cancer registration in Yaounde, capital of Cameron, with a population of about 1.5 million inhabitants. From about 20 sources, data collection is both active and passive. Data on patients and tumour are sometimes patchy due to poor documentation systems. Population data is estimative as the last census dates over a decade. The population is heterogenous and receives patients from other cities and the sub-region, causing difficulty in definition of residence. Case finding is hampered by patients who end up with traditional practitioners and others who never consult a medical institution. Post mortem diagnosis is rare as the procedure is not common pratice. Infrastructural, personnel and financial difficulties have an impact on the quantitative and qualitative value of our data.

Our 2 year statistics show early cancer trends in the population. Females predominate and cancers of the breast, cervix. Kaposi sarcoma and Lympomas are commonest. In males. Non-Hodgkin's lymphomas, prostate, liver and Kaposi sarcoma predominate. Lymphomas and Burkitt's in particular are commonest childhood tumours. There is a clear predominance of HIV/AIDS related tumours amongst all groups and ages. Our patients are mostly of low socio-economic class and treated mainly by surgery and/or chemotherapy. Cancer deaths-in period is about 3 percent, all cases dying from cancer-related factors.

We hope to improve on data collection, quality control and continue to sensitize policy makers and hospital management. Much effort is deployed to improve skills and logistics. In the near future we hope to show more accurate trends. The Yaounde cancer registry is a major step forward in the fight against cancer in Cameroon.

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INCIDENCE OF CHILDHOOD CANCER IN A KOREAN CANCER REGISTRY

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The overall incidence of childhood cancer in a metropolitan area of Gwangju (Kwangju, pop. 1.32 million) South Korea was measured by using the six year (1997 - 2002) data of community based cancer registry.

The international classification of childhood cancer (ICCC) was used for the diagnostic classification.

The overall annual incidence of childhood (0 - 14 years) cancers were 128.8 out of 1,000,000 for male and 115.3 for female. The age standardized rates (ASR) were 131.0 and 118.9 respectively.

The lowest age group (0 - 4 years) showed the highest incidences in both sexes.

In the latter ages the incidence gradually decrease in female but was not observed in male.

The most common type of childhood cancers were leukemia which occupied 32.8% of all cancer in male and 31.7% in female, followed by CNS tumors, lymphoma and reticuloendothelial tumors, and germ cell tumors.

Most of childhood cancers tended to decrease as the age increase while the carcinomas and malignant bone tumors showed comparatively higher incidences in the older age group.

THE STUDY ON THE METHODLOGY FOR THE ESTIMATION OF 5-YEAR CANCER PREVALENCE IN OSAKA, JAPAN

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Background: 5-year cancer prevalence is a significant indicator for the volume of the medical needs of patients. The accurate survival rate and the correct incidence are necessary for the exact estimation of the prevalence.

The aim of this study is to investigate the 5-year prevalence estimation methods comparing with the numerated result.

Methods: 5-year prevalence for the stomach, lung, and colon are studied by sex and incident year (1975-79: period 1, 1980-84:period 2, 1985-89: period 3, 1990-94: period 4, 1995-97: period 5) based on the patients registered in theOsaka Cancer Registry. 5-year prevalence at year x was defined as the number of patients survived over 31 December year x who were diagnosed between the year x-5 and x-1. As the reference 5-year prevalence, the number of the patients was counted up according to the above definition. For the estimation of survival rate, the Weibull model (WM) and the cure rate model (CRM) were applied to the survival curve derived from the Kaplan-Meier method (KM). The 5-year prevalence calculated with WM, CRM and KM were compared with the reference.

Results & Discussion: Relating to the survival rate estimation, CRM showed better fitting than that of WM in stomach (male, female), lung (male,female) and colon (male,female). 5-year prevalence obtained by CRM and KM was smaller than the reference in stomach, 2,121 (by CRM), 2,121 (by KM) and 2,276 (reference), and that by WM was larger, 2,468(by WM) in female in period4. 5-year prevalence obtained by CRM and KM were smaller than the reference in colon, 1,836 (by CRM), 1,836(by KM) and 1,897(reference), and that by WM was larger, 1,982 (by WM) in male in period4. The similar tendencies were shown in the other period and site.If there is no censored case,reference would agree with the prevalence calculated by KM and the preference reckoned by CRM would show good correspondent with the reference at least in these sites. Further discussion would be needed in other sites, especially for the sites whose proportion of the censored cases was abound (e.g. Breast).

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TRENDS IN CANCER INCIDENCE IN THE GAMBIA, WEST AFRICA, 1987-2002

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The collection of population-based data for the study of cancer incidence began in The Gambia with the setting-up of The Gambia Hepatitis intervention Study (GHIS) in 1986. The main objective of GHIS is to evaluated the protective effectiveness of infant immunization against hepatitis B infection in preventing primary liver cancer later in adults life in a high-risk population. A nationwide cancer registration system (the first of its kind is sub-Saharan Africa) was established to provide for the evaluation of the GHIS and the study of incidence of all cancers. We evaluated data collected by the National Cancer Registry during the period 1987-2002 to investigate trends in incidence using four time periods, 1987-1990, 1991-1994, 1995-1998 and 1999-2002. For each period, we calculated the incidence rates for five-year age groups, the age-standardised rates, using the world standard population (ASR), and the 95% confidence interval as described by Boyle & Parkin[7]. Differences in incidence between periods were tested using the Maentel-Haenzel method with modifications as described by Esteve and colleagues[8]. Age was stratified by five-year age groups for test. The results show the infection-related cancers to be the most common during all periods. Specifically, liver cancer in males and cervix cancer in females. Most cancers have shown evidence of significant increases, except for those affecting the oesophagus and testis in males and Kaposi sarcoma, vulva/vagina and leukaemia in females, which showed no change. The GHIS has shown that vaccination against HBV is >80% and >90% effective against infection and chronic carriage, respectively. Thus, in 1990 in line with WHO recommendations The Gambia adopted a mass immunization policy against HBV infection. It is hoped that immunization of children under one year against hepatitis B will drastically reduce the incidence of liver cancer in this high risk population.

[7] Boyle, P. and D.M. Parkin, *Cancer registration: principles and methods. Statistical methods for registries*. IARC Sci Publ, 1991 (95): p. 126-58

[8] Esteve, J., E. Benhamou, and L. Raymond, *Statistical methods in cancer research. Volume IV. Descriptive epidemiology*, IARC Sci Publ, 1994 (128): p. 1-302

CANCER PATTERNS IN SWAZILAND

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Introduction: The authors compare two periods of time in the history of the Swaziland National Cancer Registry (1979-83 and 1996-99) in order to obtain information on the cancer patterns, particularly in relation to the emerging pandemic of AIDS and to a population which is becoming both increasingly urbanized and westernised, and to provide clues to the causes of cancer in the population with a view to cancer prevention. The 1979-83 study is considered as pre-HIV/AIDS pandemic, while the 1996-99 one as per HIV/AIDS pandemic.

Methods: The source of notifications for the first cancer registration period (1979-83) was basically clinical. It was completed for the last two years by histology reports, which acted as an independent source of notification of cancer cases. The second cancer registration period (1996-99) was population-based. It used all diagnostic methods including histology, cytology, clinical reports and death certificates.

Results: It is difficult to make comparisons between the two studies because of the differences in case ascertainment. Nevertheless, many of the changes reflect the epidemic of AIDS, which is severe in Swaziland: prevalence of HIV infection in adults is constantly increasing: from 25.2% in 1999 to 33.4% in 2001. Thus, the frequency of Kaposi's sarcoma has increased enormously to reach 16.8% of all cancers in males (ASR = 17.2 per 100 000) and 10.4% in females (ASR = 9.5 per 100 000).

In males, the incidence of liver cancer is high (ASR = 22.0) and so is that of prostate cancer (ASR = 21.5) and cancer of the oesophagus (ASR = 14.0).

In females, the picture is dominated by the extraordinarily high rate of cervix cancer: 41.7% of all cancers (ASR = 59.3 per 100 000). Breast cancer is much less common: 8.9% (ASR = 12.9); and liver and oesophageal cancers are considerably less frequent than in males (M:F ratios in the range 3-4:1).

The incidence of childhood cancers is low. The principal cancers recorded were Burkitt's lymphoma: 12.9% (ASR = 7.6 per million); Kaposi's sarcoma: 7.5% (ASR = 4.4 per million). Haematological malignancy rates are relatively low, and many leukaemias are not further specified. This is due to the quasi absence of haematology services in the country.

Conclusions: Compared with the first study, the data in the second study are dominated by the occurrence of AIDS-related malignancies. Further studies measuring accurately the burden of AIDS-related malignancies and their risk factors in the country are required in order to understand their pathogenesis and clinical manifestations for a better management.

LE REGISTRE DES CANCERS DE BRAZZAVILLE DE 1996 À 2004
CANCER REGISTRY OF BRAZZAVILLE: 1996 TO 2004

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Before 1996, most of patients who had cancer were seen late, in advanced stage of their disease. So the first step of beginning fight against cancer was to know how was the presentation of this disease. This why we had relationship with IARC of Lyon to had a cancer registry. This scientific tool was born on 1996. But in 1997 there was a civil war in Brazzaville, also in this work, our period were 1998 to 2004.

During this period, 3241 new cases of cancer were registered: 1761 women (54,3 %), 1294 men (40,3 %) and 176 children (5,4 %) aged from 0 to 14.

The youngest patient was 3 months years old and the oldest 83. In adults the five first localizations were: liver (17%), uterus cervix (14%), breast (13%), prostate (5%) and skin (4%). In children we had found retinoblastoma, nephroblastoma, lymphoma and leukemia. Three observations could be written: the augmentation of Kaposi sarcoma because of HIV infection, importance of men breast cancer, great place of liver and cervix cancer. This is very important when we have to build policy of fight against cancer.

Avant 1996 année de création du Registre, les patients étaient vus à des stades tardifs de leur maladie. Aussi la première étape de lutte contre le cancer devrait être la connaissance du profil de la maladie. C'est ainsi qu'un accord a été signé avec le CIRC de Lyon pour mettre en place un outil performant : le registre des cancers de Brazzaville depuis le 1er janvier 1996. Mais en 1997 la guerre civile a sévi à Brazzaville aussi avons-nous choisi la période qui va de 1998 à 2004 pour le présent travail.

Durant cette période nous avons enregistré 3241 nouveaux cancers dont 1761 (54,3 %) chez les femmes, 1294 (40,3 %) chez les hommes et 176 (5,4 %) chez les enfants âgés de 0 à 14 ans. Le plus jeune patient avait 3 mois et la plus âgée 83 ans. Les cinq premières localisations chez l'adulte sont : le foie (17%), le col utérin (14 %), le sein (13 %), la prostate (5%) et la peau (4%). Chez les enfants on a trouvé des rétinoblastomes, néphroblastomes, lymphomes et leucémies.

Trois observations peuvent être tirées de ces chiffres : l'augmentation du sarcome de Kaposi en relation avec l'infections à VIH, l'importance des cancers du sein chez l'homme et la place prépondérante des cancers du foie et du col utérin. Ceci devra guider la politique de lutte contre le cancer.

CERVICAL CANCER IN NEW CALEDONIA: TRENDS BY ETHNIC GROUPS ON 15 YEARS ASSESSMENT AND EVALUATION OF THE TERRITORIAL SCREENING PROGRAM

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Background: New Caledonia is located in the South Pacific area, where the population is multiethnic: Melanesians 44.1%, Europeans 34.1%, Polynesians 11.6%, Asiatics 3.9% and others 6.1%. The geographical distribution of the ethnic groups is unequal: in Loyalty Islands 97% of the population are Melanesians, 78% in Northern Province and 25% in Southern Province. The main city Noumea, located in the Southern Province, concentrate 40% of the population, with 57% of the Europeans. Cervical cancer is the second cancer in all Caledonian females; a territorial screening program of cervical cancer was initiated in 1994 by the Sanitary Authorities. Our study presents the analysis of 15 years assessment (1989-2003) by the Cancer Registry of New Caledonia and the evaluation of the Territorial screening program.

Method: All cancers with topographic code 530-539 and diagnosed between 1989 and 2003 were selected from the Cancer Registry of New Caledonia. Standardised incidence rates (SIR) were used to measure the cervical cancer risk in the different ethnic groups and geographical areas. The time trend of advanced stages was used as a criterion to evaluate the program.

Results: From 1989 to 2003, 291 cases of cervical cancer were registered (SIR of 22.2/100,000 female years). Mean age at diagnostic was 49.8 years (range 22-96 years), similar among the different ethnic groups. The incidence was much higher for Melanesians (SIR 32.5) and Wallisians (SIR 25.8) than for Europeans (SIR 13.2). This trend is confirmed by the geographical variation of incidence : the incidence rates are higher in the Loyalty Islands and the Northern Province than in the Southern Province.

The incidence of cervical cancers was stable during the 15 years for all ethnic groups, but the mean age at diagnosis decreased from 51 years before 1998 to 46 years after. There is an effect of time on stage : 62.5% of cervical cancers before 1994 were diagnosed in stages III and IV, 37% between 1994 and 1998, and 27% since 1999. This effect was more pronounced for Melanesians and Wallisians.

Conclusion: Cervical cancer was more incident and was diagnosed at a more advanced stage in non-European groups. The screening program has improved the detection at an early stage; all the ethnic groups receive the benefits of this program in New Caledonia.

CANCER DATA IN THE REPUBLIC OF MAURITIUS FOR THE PERIOD 1997-2001

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OBJECTIVE: To pursue registration and data analysis of malignant neoplasms in Mauritius.

BACKGROUND: Republic of Mauritius is situated in the Indian Ocean with a racially mixed population of about 1.2 million. Life expectancy in 2004 was 68.1 years in males and 75.3 years in females. Cardiovascular diseases are the first mortality cause and cancer ranks second. Since 2001, National Breast and Cervical Cancer Screening Programmes by clinical breast examination (CBE) and Pap smear respectively have been started.

DESIGN: Cancer information is collected annually from public and private health institutions and other relevant authorities and processed using Canreg4 to reach a population-based registry level.

RESULTS: During 1997-2001, 6484 new cases of cancer have been diagnosed in Mauritius giving a crude incidence rate of 99.9 per 105 among males and 121.1 per 105 in females. The Age-Standardised Rate (World) was 118.7 for males and 117.1 for females. Colo-rectal (9.5%), Mouth/Pharynx (9.4%), Prostate (8.8%) and Lungs (8.6%) are the leading cancer sites in males (N=2 922) whereas in females (N= 3 562) Breast (28%) and Cervix (11.7%) rank top, far ahead of colo-rectal cancer (5.9%) and leukaemias & myeloma (4.7%).88% of cases have been histologically verified.

Mortality rates due to cancer for the same period are 67.9 per 105 in males and 60.9 per 105 in females. The most prevalent sites reported are: Lungs (18.2%), Stomach (12.5%) and Prostate (8.4 %) in males and Breast (17.2%), Cervix (13.3 %) and Stomach (8.6 %) in females. The Mortality/Incidence ratio is 0.68 in males and 0.5 in females.

CONCLUSIONS: Although compared to neighbouring countries, our Age-standardised rates are still low, there is a definite increasing trend amongst the prevalent sites like female breast, prostate, brain tumours and haematological malignancies. Health authorities intend to embark on breast cancer screening by mammography shortly as well as setting up a comprehensive National Cancer Control Programme (NCCP).

DEVELOPING A RURAL POPULATION-BASED CANCER REGISTRY IN SOUTH AFRICA: CHALLENGES AND PITFALLS

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Collection of reliable data is well established in developed countries while in the developing world there are still many hurdles. A few population-based cancer registries have been set up in Africa to collect and generate internationally acceptable cancer incidence data. The majority of these registries are in urban areas where there are better medical facilities and well established sources for proper diagnosis of sites and case finding. Established of population-based cancer registries as a reliable cancer surveillance system is important in rural communities as it is in urban areas, especially in South Africa where there are cultural diversity and environmental differences that can influence the pattern of cancer. However, setting up a rural population-based cancer registry faces many challenges.

The experience of establishing the cancer registry in rural Transkei region of the Eastern Cape Province in South Africa will be used to examine the issues that face a registry in resource-poor settings. These include the following:

1) Case finding and recording.

2) Diagnosis and verification.

3) Commitment and collaboration from medical specialists.

4) Regional facilities

The data suggest that a large proportion of cancers are detected late in the course of disease and efforts to achieve earlier diagnosis and delivery of adequate palliative care and pain relief deserve urgent attention.

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CANCER IN MALI: CANCER REGISTRATION FROM 2002 TO 2004

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The cancer registry of Mali started operations in 1986. It is located in the department of pathology of the National Institute of Public Health Research in the capital city, Bamako. This department provides the basic source of information for the registry, and is the only histopathologic service in the country.

Active case finding is carried out by a cancer registrar who regularly visits major hospitals, specialized institutes (dermatology and ophthalmology) and centres of maternal and child health staffed by gynaecologists. Death registration is scanned by the registry as a source of information.

During the last 3 years, 2154 cancers were registered with most women (sex ratio = 1.1). The most common cancers of men were stomach (ASR 23.9 per 100 000; 16.7%), liver (ASR 17.5 per 100 000; 13.8%), bladder (ASR 9.8 per 100 000; 13.8%), prostatis (ASR 10 per 100 000; 8.8%) and rectum (ASR 3.9 per 100 000; 3.8%). In females, cervix (ASR 25.4 per 100 000; 20.8%), breast (ASR 24.8 per 100 000; 17.1%), stomach (ASR 20.7 per 100 000; 9.9%), bladder (ASR 8.2 per 100 000; 9.7%) and liver (ASR 8 per 100 000; 5.3%). Comparison with the precedent data in Cancer Incidence in Five Continents suggests some decline in the incidence of liver cancer, and increase in the incidence of stomach cancer in both sexes. This situation in contrast with series from neighbouring countries remains to be investigated further.

Key words: cancer – registry - Mali

THE INCREASING INCIDENCE OF UTERINE CANCER AMONG YOUNG ADULT WOMEN IN KANAGAWA PREFECTURE, JAPAN

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INTRODUCTION: Up to 1975, uterine cancer was the top cause of cancer mortality among women in Japan. Between the years 1950 and 1990, the age-adjusted mortality from uterine cancer dropped sharply from 31.0 to 5.8 women (per 100,000 women). Deaths from uterine cancer declined at a much slower rate over the ensuing twelve years, however, reaching a mortality of 5.2 by the year 2002. In this study we searched for the factor behind the slowness in uterine cancer mortality by reviewing the incidence and mortality statistics for uterine cancer chronologically using data from the population-based cancer registry of Kanagawa Prefecture, Japan.

MATERIALS AND METHODS: The incidence and mortality rates for uterine cancer were calculated using data collected by the Kanagawa Cancer Registry form 1960 up to 2000. Segi-Doll's world population was used as the standard population for age adjustment. The chronological changes in incidence and mortality were observed by age-group, by topography (cervix uteri or corpus uteri), and by histology (invasive cancer or carcinoma in situ).

RESULTS AND DISCUSSION: The age-adjusted incidence of uterine cancer in Kanagawa Prefecture fell from 22.8 in 1960-62 to 13.6 in 1991-1993. The trend subsequently reversed, however, and by 1997-1999 the incidence had risen to 16.2. The mortality rates in the same periods were 10.6, 4.2 and 3.7 respectively. Significantly, it was mainly the cancers of the cervix uteri, not the corpus uteri, that decreased in incidence and mortality. The recent rise of cervical cancer incidence in the 1990s was found to be concentrated in younger women aged 20-39 years old. Most of the cervical cancers in this age group were not invasive cancers, but carcinoma in situ.

Though mortality from cervical cancers has decreased overall in Japan, the data indicate that the incidence of carcinoma in situ has increased in younger women. This may be due to significant changes in the sexual habits of young adult women in Japan. For these reasons, it will be crucial to provide cancer screening programs for early detection and early treatment for women of earlier ages.