

RESEARCH COMMUNICATION

Five Years Cancer Incidence in Aden Cancer Registry, Yemen (2002-2006)

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Abstract

The population-based Aden Cancer Registry (ACR) started its activities in 1997. The objective of the registry is to establish a reliable magnitude of cancer in the area covered and the first report was published in 2003. The present article describes data from the second report of cancer incidence over a five year period (2002-2006). Internationally accepted standardized cancer registration methodologies described by IACR and IARC were used. CanReg-4 using ICDO-3 and ICD-10 were applied in the data processing and analysis. Results showed no difference in the overall incidence between the males and females (ratio was 0.83:1) and age standardized rates (ASR) per 100,000 inhabitants were 30.2 and 31.1. The five most common cancers were breast cancer, leukemia, non-Hodgkin's lymphomas (NH lymphoma), brain cancer and Hodgkin's disease (16.6%, 12.6%, 7.8%, 5.2% and 4.4%, respectively). Among males, leukemia was the first followed by NH lymphoma, Hodgkin's disease, brain and liver. In females, breast was the first, then leukemia, NH lymphoma, thyroid and brain cancer. The highest ASR for males (145 per 100,000 inhabitants) was observed at age 70-74 years whereas for females, two peaks (each 10⁵ per 100,000 inhabitants) were equally noticed at age 60-64 and 70-74 years. Generally, females showed equal or higher incidence compared to males until age 55-59 where males reported higher incidence. The overall pattern of cancer incidence in this report is not much different from that in the previous report. Furthermore, the report generally indicates that the pattern of the most common registered cancer bears some similarities with the adjacent Gulf Cooperation Council States with which we share many characteristics, despite differences that warrant further investigation.

Keywords: Cancer registry - Aden - Yemen

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Introduction

Cancer registry is considered the corner stone for the documentation of basic data about cancer patients and an entry into a computerized register. This is considered as an initial step in the beginning of the establishment of the epidemiology of cancer and at the same time attempting to ensure continuity of care for the patient (Parkin, 2006).

Aden Cancer Center (ACC) was established in 1997 to coordinate the planning and implementation of such activities related to cancer as registration of cancer cases, preventive measures, education, diagnosis, treatment, palliation and rehabilitation. However, due to limited financial and personal resources, the current activities of the center are more directed towards cancer registry, prevention and research activities. At its starting phase in early 1997, Aden Cancer Registry (ACR) was functioned as hospital-based registry. Its primary activity aimed to assess the available facilities that could be used for data collection and to specify obstacles existing in this regard. In 1998, ACR was recognized as a population

based cancer registry (PBCR). Specifically, the current functions of ACC are:

- Training in cancer registration at the national level;
- Compilation of information on existing health care facilities for cancer in the covered area;
- Collection of other cancer related epidemiological data;
- Preparation of cancer incidence report;
- Arranging consultation in cancer registration and cancer epidemiology;
- Coordination between other cancer registries in Yemen in cancer registrations, training and research.

The primary objectives of ACR are to determine the population-based cancer incidence and collect other cancer related epidemiological data from targeted governorates in Yemen. Plans for future activities include supporting early detection and cancer screening programs and epidemiological studies on cancer.

In 2003, the first cancer incidence report in Yemen

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was published based on ACR registry data covering the period 1997-2001 (Bawazir et al., 2003). This is the second report which includes cancer incidence for also five years 2002-2006 registered in ACR.

Methodological Approach

Besides Aden, three other governorates are the target of ACR. These are Lahej, Abyan and Al-dhale'e. The total population residing in these areas is estimated at two million inhabitants based on population and houses census of 2004 (Republic of Yemen, 2005).

Data are collected from the different hospitals (public and private), diagnostic centers and the archive of abroad treatment at the Ministry of Public Health and Population in Aden Branch. Cancer related data are abstracted from patients' medical records based on clinical and histological diagnosis of cancer using special form designated for this purpose. The data include patients' identification numbers, demographic information, cancer site, histology, etc. Tumors are coded for topography and morphology based using the International Classification of Diseases for Oncology book (ICDO-3).

The collected data enter to the computerized package Can Reg-4. All the essential data are revised for monitoring any duplication or incompleteness. Classification and coding of the neoplasm are carried out according to the ICD-O and ICD-10. Validation checks of the entered data are carried out by the computer system on each data item to ensure that no invalid codes are fed into the database. Confidentiality of the received data is one of the important tasks of the working group.

The following calculation methods for the registration work are used: percentages, age specific rates, crude incidence rate (CIR) and the age-standardized incidence rate (ASR). The World Standard Population and the local population of the four governorates covered by the registry are used in the calculation process as internationally recommended (Boyle and Parkin, 1991).

Cancer Incidence in ACR

Overall Incidence and Common Cancer

The total number of cancer cases registered in ACR was 2018 (Male 916; Female 1102) and the male to female ratio was 0.83:1. ASR per 100,000 inhabitants was 30.2 for males and 31.1 for females as shown in Figure 1.

The CIR per 100,000 inhabitants was 17 and 29.4 for males and females respectively. The overall incidence of the predominant five cancers in order of their relative frequencies registered in 2002-2006 is outlined in Table 1 followed by the incidence of five common cancers by sex in Table 2. Furthermore, Tables 3 and 4 show the incidence figures for males and females respectively.

Cancer incidence appeared symmetrically low among males and females in early childhood up to the age of 29 when it started to increase gradually in both sexes. The highest ASR for males (145 per 100,00 inhabitants) was observed at age 70-74 years. For females, two peaks were equally noticed (105 per 100,000 inhabitants) at age 60-64 and 70-74 years in. Generally, females showed equal

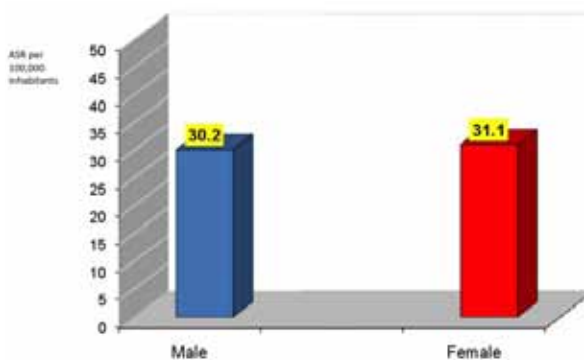


Figure 1. ASR for All Cancers by Sex, ACR, 2002-2006

Table 1. The Five Most Common Cancers, ACR, 2002-2006

Cancer Type	No.	%
Breast	334	16.6
Leukaemia	254	12.6
NH Lymphoma	158	7.8
Brain	104	5.2
Hodgkin's disease	88	4.4

Table 2. The Most Common Cancers by Sex and Cancer Site, ACR, 2002-2006

Cancer Type	Male			Female			
	No.	%	*ASR	Cancer Type	No.	%	*ASR
Leukaemia	133	14.5	1.0	Breast	334	30.3	9.6
NH Lymphoma	91	9.9	2.4	Leukaemia	121	11.0	0.9
Hodgkin's Disease	60	6.6	1.4	NH Lymphoma	67	6.1	1.8
Brain	56	6.1	1.7	Thyroid	58	5.3	1.6
Liver	46	5	1.9	Brain	48	4.4	1.2

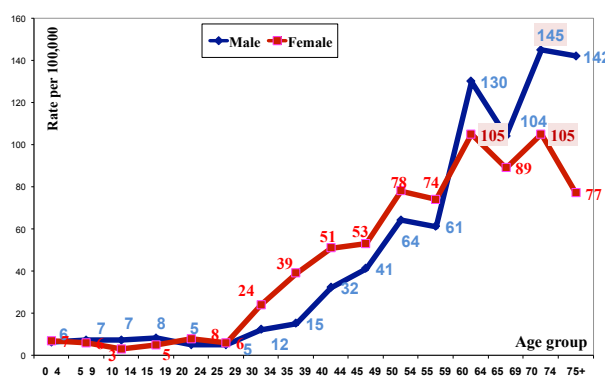


Figure 2. Age-Specific Incidence Rates of All Cancers, ACR, 2002-2006

or higher incidence compared to males until age 55-59 where males reported higher incidence as demonstrated in Figure 2.

Site-Specific Cancer

Female Breast Cancer

Between January 2002 and December 2006, 334 cases of female breast cancer were reported. This cancer is the

Table 3. Age-dependent Incidence Rate for Males

Site ICD	All Ages	Age Unk.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	Crude ASR Rate	World	
Lip C00	7	1	0	0	0	0	0	0	0	0	0	1.9	0	0.9	0	3.5	0	0	0.1	0.3	
Tongue C01-02	8	0	0	0	0	0	0.1	0	0	0	0.5	1.9	0.7	0.9	1.3	0	0	0	0.1	0.3	
Mouth C03-06	5	0	0	0	0	0	0	0	0	0	0.5	0.6	0	0	3.9	0	0	0	0.1	0.2	
Salivary glands C07-8	6	0	0.1	0	0	0	0	0	0.3	0	0	0	0	1.8	2.6	0	0	0	0.1	0.2	
Tonsil C09	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2.5	0.1	0.1	
Other Oropharynx C10	3	0	0	0	0	0	0	0	0	0.9	0.5	0	0	0	0	0	0	0	0.1	0.1	
Nasopharynx C11	26	0	0	0	0.2	0.3	0.1	0	0.3	0.4	1.6	3.2	2.9	1.8	7.8	0	0	0	0.5	0.9	
Hypopharynx C12-13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pharynx unsp. C14	2	0	0	0	0	0	0	0	0	0	0	0	0	0.9	1.3	0	0	0	0	0.1	
Oesophagus C15	38	2	0	0.1	0	0	0	0	0	0.4	0	1.3	1.4	4.6	9	8.8	15.9	15.2	0.7	1.7	
Stomach C16	34	1	0.2	0	0	0	0	0.2	0.3	1.3	1.6	0.6	2.9	1.8	5.2	7.1	13.6	5.1	0.6	1.3	
Small intestine C17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.3	2.5	0	0.1	
Colon C18	32	2	0	0	0	0.3	0	0.4	0.7	0	1	1.9	4.3	1.8	6.5	7.1	2.3	2.5	0.6	1.2	
Rectum C19-20	14	0	0	0	0	0	0	0	0.3	0.4	0.5	0.6	1.4	0	3.9	1.8	6.8	2.5	0.3	0.6	
Anus C21	3	0	0	0	0	0	0	0	0.3	0	0.5	0	0.7	0	0	0	0	0	0.1	0.1	
Liver C22	46	1	0.1	0	0	0	0.1	0	0.7	0.9	0	1.3	6.5	7.4	6.5	8.8	11.4	12.7	0.9	1.9	
Gallbladder etc. C23-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pancreas C25	22	0	0	0	0	0	0	0	0	0.4	0.5	1.3	1.4	5.5	2.6	5.3	9.1	2.5	0.4	0.9	
Nose, sinuses etc. C30-31	4	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0	2.5	0.1	0.2	
Larynx C32	42	1	0	0.1	0	0	0	0	0	0.9	1	3.2	5.1	2.8	11.6	5.3	11.4	10.1	0.8	1.8	
Trachea, Bronchus, Lung C33-34	37	0	0.2	0	0.2	0	0.1	0	0.7	0	1	2.6	3.6	0.9	3.9	7.1	9.1	20.3	0.7	1.5	
Other Thoracic organs C37-38	3	0	0	0.1	0	0	0	0	0	0	0	0.6	0	0.9	0	0	0	0	0.1	0.1	
Bone C40-41	45	1	0	0.1	0.3	1.8	0.6	0.6	0.3	0.9	2.1	1.3	3.6	0.9	3.9	1.8	6.8	2.5	0.8	1.2	
Melanoma of Skin C43	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.3	2.5	0	0.1
Other Skin C44	12	0	0	0	0.2	0	0	0	0	0	0	1.9	2.2	1.8	0	0	2.3	5.1	0.2	0.5	
Mesothelioma C45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kaposi sarcoma C46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Connective, Soft tissue C47;49	16	0	0.2	0	0.2	0.2	0.4	0.2	0.3	0.4	0	0.6	0	0.9	1.3	0	4.5	2.5	0.3	0.4	
Breast C50	13	3	0	0	0	0.2	0.1	0	0	0.4	0.5	0	0.7	0	1.3	1.8	2.3	5.1	0.2	0.5	
Penis C60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Prostate C61	14	0	0	0	0.2	0	0	0	0	0	0	0.6	0.7	0.9	5.2	3.5	4.5	5.1	0.3	0.6	
Testis C62	3	0	0	0	0	0	0.1	0.2	0	0	0	0	0	0.9	0	0	0	0	0.1	0.1	
Other male genital C63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kidney C64	14	0	0.5	0.3	0	0.2	0	0	0.3	0.4	1	0	0.7	0.9	0	1.8	0	0	0.3	0.3	
Renal Pelvis C65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ureter C66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bladder C67	34	3	0.1	0	0	0	0	0.2	0.3	0	2.1	0	3.6	0.9	3.9	10.6	11.4	10.1	0.6	1.4	
Other Urinary organs C68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Eye C69	6	0	0.1	0.1	0	0	0	0.2	0	0	0	0	0	0.9	2.6	0	0	0	0.1	0.2	
Brain, Nervous system C70-72	56	1	0.6	0.4	0.6	0.8	0.4	0.4	0	1.3	2.6	3.8	1.4	2.8	6.5	8.8	2.3	7.6	1	1.7	
Thyroid C73	21	0	0	0.3	0.2	0	0	0	1.7	0.9	1	0	0.7	0.9	5.2	1.8	4.5	0	0.4	0.7	
Adrenal gland C74	2	1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Endocrine C75	3	1	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	2.5	0.1	0.1	
Hodgkin disease C81	60	2	0.5	1.4	1	1.6	0.3	0.2	1	0.4	3.6	1.9	1.4	2.8	3.9	3.5	0	0	1.1	1.4	
Non-Hodgkin lymphoma C82-85;96	91	3	1.4	1	1.3	1	0.7	0.6	0.7	1.8	2.1	4.5	8.7	5.5	6.5	3.5	4.5	5.1	1.7	2.4	
Immunoproliferative dis. C88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Multiple Myeloma C90	3	1	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	2.5	0.1	0.2	0.2	
Lymphoid Leukaemia C91	73	1	1.8	2.2	1.8	0.7	0.9	1	0.7	0.4	1	1.3	0	0	3.9	1.8	0	5.1	1.4	1.3	
Myeloid Leukaemia C92-94	47	3	0	0.5	0.3	0.3	0.6	0.6	1	0.9	1.6	2.6	2.9	2.8	7.8	1.8	6.8	0	0.9	1.4	
Leukaemia unsp. C95	13	0	0.2	0	0.3	0.7	0	0.2	0	0	0.5	0	0	0.9	0	0	4.5	0	0.2	0.3	
Other & unspecified Other	51	2	0	0.1	0.3	0	0.1	0.2	1.4	0.9	3.1	1.3	5.1	4.6	9	8.8	6.8	7.6	0.9	1.9	
All sites Total All	916	30	6	7	7	8	5	5	12	15	32	41	64	61	130	104	145	142	17	30.2	
All sites but C44 Not C44	904	30	6	7	7	8	5	5	12	15	32	39	61	59	130	104	143	137	16.8	29.8	

first ranked cancer among overall cancer sites (16.6%) and female cancers (30.3%). The ASR was 9.6/100,000 female population. The median age at diagnosis was 45 years. The highest age-specific incidence rate was 34.7/100,000 female population and was observed in the age group 50-54 years as seen in Figure 3.

Leukaemia

During the study period, 254 cases of leukaemia accounted for 12.6% of all cancers. The overall ASR was 1/100,000 male population for males and 0.9/100,000 female population for females. Leukaemia ranked first for males and second for females. There were 133 (52.4%)

male cases and 121 (47.6%) female cases with a ratio of 1.1:1. The median age at diagnosis was 21.5 years for males and 24.0 years for females with a range of 1-80. As seen in Figure 4, the highest age-specific incidence rate for males was 5.9/100,000 male population at the age 60-64 years, and 5.9/100,000 female population which was observed in the age group 75+ years.

Non-Hodgkin's Lymphoma

The total number of reported non-Hodgkin's lymphoma was 158 cases accounted for 7.8% of all cancers. The overall ASR was 2.4/100,000 male population for males and 1.8/100,000 female population

Table 4. Age-dependent Incidence Rate for Females

Site ICD	All Ages	Age Unk.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	Crude Rate	ASR World
Lip C00	3	0	0	0.1	0	0	0	0	0	0	0	0	0	0	1.1	0	0	2	0.1	0.1
Tongue C01-02	10	0	0	0.1	0	0	0	0	0	0.4	0	0.5	1.2	1.6	1.1	1.5	2.1	0	0.2	0.3
Mouth C03-C06	3	0	0.1	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	2	0.1	0.1
Salivary glands C07-08	6	0	0	0	0	0	0.3	0	0.4	0	0.5	0	0	1.1	0	2.1	0	0	0.1	0.2
Tonsil C09	5	0	0	0	0	0	0	0	0.4	0	0	0	0.8	2.2	0	2.1	0	0	0.1	0.2
Other Oropharynx C10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nasopharynx C11	12	1	0	0.1	0	0.2	0.2	0	0.4	0.8	0.4	0	0.6	1.6	0	1.5	0	0	0.2	0.3
Hypopharynx C12-13	2	1	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0.1
Pharynx unspec. C14	4	0	0	0	0	0	0.3	0	0	0	0	0.5	0.6	0	0	0	0	0	0	0.1
Oesophagus C15	40	0	0	0	0	0	0.2	0	0.7	1.2	1.6	1	3.7	3.2	6.7	9.1	6.2	5.9	0.7	1.4
Stomach C16	29	2	0.1	0	0	0.3	0	0.2	0	0.8	0.8	1	1.8	1.6	5.6	3	4.1	5.9	0.5	1
Small intestine C17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0	0	0
Colon C18	25	1	0	0	0	0	0	0	0	0.4	2	1	1.2	2.4	5.6	4.5	4.1	2	0.5	0.9
Rectum C19-C20	17	0	0	0	0	0	0	0	0.7	0.4	1.2	0.5	2.4	1.6	1.1	3	0	2	0.3	0.5
Anus C21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liver C22	23	1	0	0	0	0.2	0	0	0.4	0.8	2	1.5	1.2	1.6	3.4	1.5	4.1	0	0.4	0.7
Gallbladder etc. C23-24	4	0	0	0	0	0	0	0	0	0.4	0	0.6	0	0	1.5	2.1	0	0	0.1	0.1
Pancreas C25	14	0	0	0	0	0.2	0	0	0.4	0	0.5	1.2	2.4	3.4	0	4.1	2	0.3	0.5	
Nose, sinuses etc. C30-31	1	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0
Larynx C32	3	0	0.1	0	0	0	0	0.2	0	0	0	0	0	0.8	0	0	0	0	0.1	0.1
Trachea,Bronchus, Lung C33-34	18	1	0.2	0	0	0	0	0	0	0.4	0.4	1.5	0.6	0	3.4	0	8.2	4	0.3	0.6
Other Thoracic organs C37-38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bone C40-41	40	0	0.2	0.1	0.7	0.5	0.8	0.6	0.4	0.8	2	1.5	1.8	1.6	3.4	0	6.2	0	0.7	1
Melanoma of Skin C43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Other Skin C44	18	0	0	0	0	0	0.2	0.2	0	0	0	0.5	0.6	0.8	8.9	0	6.2	4	0.3	0.7
Mesothelioma C45	1	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0
Kaposi sarcoma C46	1	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0
Connective, Soft tissue C47;49	18	0	0.4	0	0.2	0.2	0.3	0.2	0.7	0.4	0.8	1	0.6	0.8	0	0	2	0.3	0.4	0.4
Breast C50	334	6	0.5	0.1	0	0.2	1.6	1.2	10.6	14.7	23.1	23.4	34.7	23.7	16.8	28.8	16.4	11.9	6.2	9.6
Vulva C51	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0	0	0	0
Vagina C52	4	0	0	0	0	0	0	0	0.4	0	0	1	0.6	0	0	0	0	0	0.1	0.1
Cervix Uteri C53	29	0	0	0	0	0	0.3	0	0.4	0.8	2	1.5	4.3	0.8	2.2	1.5	8.2	2	0.5	0.9
Corpus Uteri C54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uterus unspec. C55	4	0	0	0	0	0	0	0	0	0	0	0.5	0	1.6	0	0	2	0.1	0.1	0.1
Ovary C56	35	0	0	0	0	0	0.5	0.4	1.4	1.6	2.8	0.5	1.2	3.2	5.6	4.5	0	0	0.7	1
Other Female Genital C57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Placenta C58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kidney C64	7	0	0.2	0.1	0	0	0	0	0	0.4	0	0.6	0.8	0	0	0	2.1	0	0.1	0.2
Renal Pelvis C65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ureter C66	1	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0
Bladder C67	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	3	0	2	0.1	0.2
Other Urinary organs C68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eye C69	6	0	0.1	0	0	0	0	0.2	0.4	0	0.4	0.5	0	0	0	0	0	2	0.1	0.1
Brain, Nervous system C70-72	48	2	0.4	0.4	0.5	0	0.5	0.4	0.7	2.5	2	1.9	1.8	4	4.5	1.5	2.1	2	0.9	1.2
Thyroid C73	58	0	0.1	0	0	0.3	0.3	0.8	1.1	5.3	3.2	3.4	3	2.4	6.7	3	4.1	0	1.1	1.6
Adrenal gland C74	1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Endocrine C75	1	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hodgkin disease C81	28	0	0.2	0.5	0.2	0.7	0.5	0.6	0.7	0.8	0	1	0	0.8	2.2	0	4.1	0	0.5	0.6
Non-Hodgkin lymphoma C82-85;96	67	0	0.8	1.1	0.5	0.3	0.3	0.4	1.4	2	0.4	2.9	0.6	6.3	10.1	6.1	2.1	7.9	1.2	1.8
Immunoproliferative dis. C88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multiple Myeloma C90	4	0	0	0	0	0	0	0	0	0	0.5	0	0.8	1.1	1.5	0	0	0	0.1	0.2
Lymphoid Leukaemia C91	59	2	2.3	2	0.5	1	0.3	0	0.7	0.4	1.2	0	1.8	0.8	0	0	4.1	0	1.1	1
Myeloid Leukaemia C92-94	56	1	0.5	0.5	0	0.3	0.5	0.6	1.8	2	2	1	3.7	4.7	4.5	4.5	0	5.9	1	1.5
Leukaemia unspec. C95	6	0	0	0	0	0.3	0.2	0.2	0	0	0	0	1.2	0	0	0	0	0	0.1	0.1
Other & unspecified Other	50	0	0.4	0.1	0.2	0	0.3	0	1.4	0.8	0.8	3.4	4.9	3.2	3.4	7.6	8.2	7.9	0.9	1.5
All sites Total All	1102	18	7	6	3	5	8	6	24	39	51	53	78	74	105	89	105	77	20.5	31.1
All sites but C44 Not C44	1084	18	7	6	3	5	8	6	24	39	51	53	77	73	96	89	99	73	20.1	30.4

for females. This cancer ranked second among males and third among females. There were 91 (57.6%) male cases and 67 (42.4%) female cases with a ratio of 1.4:1. The median age at diagnosis was 40 years for males and 45 years for females with a range of 1-87 years. The highest age-specific incidence rate was 8.7/100,000 male population for males at the age 50-54 years and 10.1/100,000 female population for females at the age 60-64 years (Figure 5).

Brain and Nervous System Cancers

In the ratio of 1.2:1. The median age at diagnosis was 44.5 years for males and 40 years for females with a range of 1-80 years. Figure 6 shows the highest age-specific incidence rate at 8.8/100,000 male population among males and observed at the age 65-69 years, whereas that of females was 4.5/100,000 female population at the age 60-64 years.

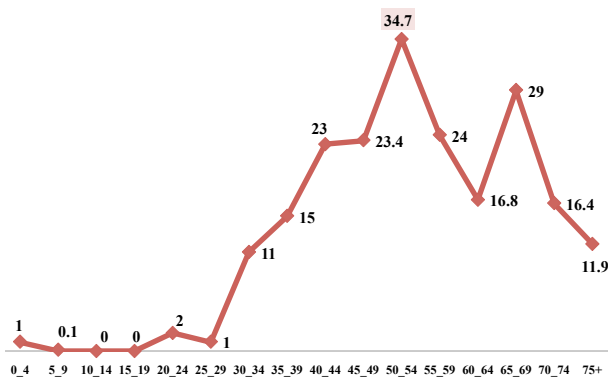


Figure 3. Age-Incidence Specific Rate for Female Breast Cancer, ACR, 2002 - 2006

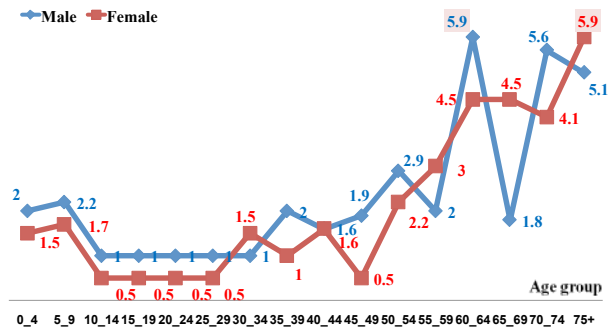


Figure 4. Age-Specific Incidence Rate of Leukemia, ACR, 2002 - 2006

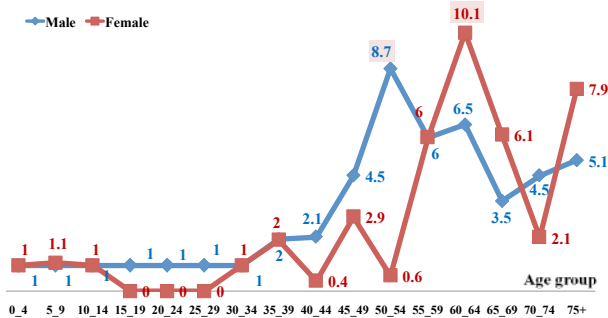


Figure 5. Age-Specific Incidence Rate of NHL, ACR, 2002 - 2006

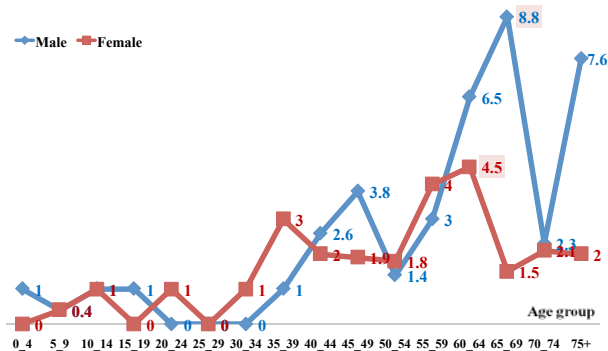


Figure 6. Age-Specific Incidence Rates of Brain and Nervous System Cancers, ACR, 2002 - 2006

Hodgkin's Disease

During January 2002 through December 2006 there were 88 cases of Hodgkin's disease. This cancer accounted for 4.4% of all cancers. The overall ASR was 1.4/100,000 male population for males and 0.6/100,000 female population for females. This cancer is the third cancer

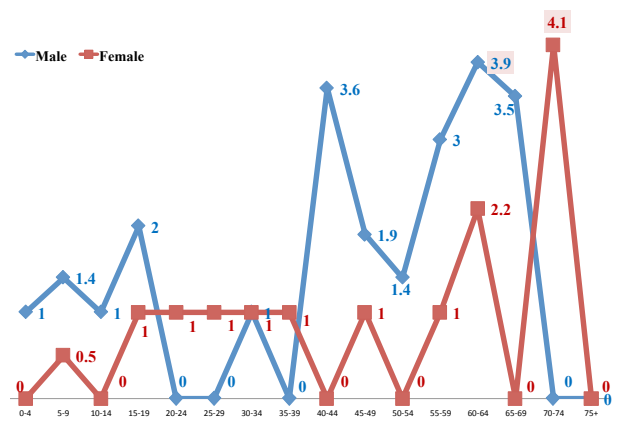


Figure 7. Age-Specific Incidence Rate of Hodgkin's Disease, ACR, 2002 - 2006

among males and the ninth cancer among females. There were 60 (68.2%) cases among male versus 28 (31.8%) female cases with a ratio of 2.1:1. The median age at diagnosis was 17 years for males and 24 years for females with a range of 3-70 years. The highest age-specific incidence rate was 3.9/100,000 male population among males and observed at the age 60-64 years, whereas that of females 4.1/100,000 female population at the age 70-74 years as demonstrated in Figure 7.

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

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