The changing pattern of malignant neoplasms among females in Asir region of Saudi Arabia

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ABSTRACT

Objective: The study was undertaken to compare the frequencies of the various types of malignant neoplasms affecting females in the Asir Region of Saudi Arabia during the years 1996-1998, to the experience of a previous report (1987 to 1989) in the same population with rapid advancing health care services.

Methods: A retrospective descriptive approach was adopted. Histopathological records of Asir Central Hospital were reviewed to extract data on female malignant neoplasms seen in the years January 1996-December 1998. The cancer from various sites were ranked based on their percentage (crude relative) frequencies, and compared with the previous report (1987-1989).

Results: Of the 274 cases of histologically confirmed female malignant diseases, the breast (22%), skin (9%) and thyroid (7%) were the leading sites. This ranking contrasts with the previous finding (1987-1989) which involved the skin, breast and non-Hodgkin's lymphoma, in descending order of frequencies. The frequency of gynecological malignancies was relatively higher than in the previous report.

Conclusion: There may be a need to review the pattern of malignancies in the female population in this region from time to time in order to concurrently update planning on preventive and treatment measures.

Keywords: Female malignant neoplasms, changing pattern.

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The pattern of malignancy varies from one geographical area to the other. It is widely influenced by ethnic, dietary and social differences. In Saudi Arabia, regional variations in the prevalence of different cancers have been recognized as documented from data obtained from tertiary care centers.[1]

Asir Central Hospital (ACH) is a 576-bed tertiary institution, which serves as the main referral center for patients of the Asir region. The surgical pathology laboratory of ACH serves not only the hospital, but also Abha Maternity Hospital (AMH) which is the tertiary obstetrics and gynecology referral unit and hospitals located in Khamis Mushayt, Ahad Rufaida, Sarat Abidah, Zahran Al-Janoob, Rajal Alma, Muhayl, Majardah, Billasmar, Al-Namas and Bisha.

During a 3-year period (1987 to 1989), hospital-based study on female malignancies seen in ACH pathology department was reported.[2] Asir Region, like other regions in the Kingdom, has rapidly advancing health care services. The study was undertaken to see if there were any obvious changes in the pattern of female malignancies as compared to the previous report about a decade earlier.

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Methods. A retrospective descriptive design study was adopted. Between January 1, 1996 and December 31, 1998, all reports of histologically confirmed cases of female malignancies in the surgical pathology laboratory of ACH were reviewed. There were 274 histologically confirmed cases, which formed the study group. The data collected in each case included: age, hospital and histopathology numbers, nationality, site of tumor and histopathology report. Care was taken to avoid duplication of data in cases in which multiple specimens from the same patient were examined. The malignancies were tabulated according to the organ or affected primary body sites, frequency by age distribution, total number of cases per site and nationality of patient. Females who were not Saudi indigenes were classified as Non-Saudis (NS).

Results. During the 3-year period (1996-1998), 274 cases of female malignancies were diagnosed in ACH pathology laboratory. Sixteen (6%) of these patients were Non-Saudis. The distribution of the studied cases according to age and tumor site are shown in Table 1. The tumor sites were arranged according to their relative frequencies in a

Table 1 - Age related distribution of malignant tumors in females in ACH (January 1996 to December 1999).

Site of tumor	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	> 80	Total (%)	NS
Breast	0	2	5	13	23	10	6	1	0	60 (22)	7
Skin (SCC, BCC, Melanoma)	0	0	3	1	4	1	7	6	3	25 (9)	0
Thyroid	0	3	5	6	5	0	0	0	1	20 (7)	0
Non-Hodgkin's Lymphoma	5	2	0	1	1	2	3	3	1	18 (6.5)	1
Uterus/Endometrium	0	1	0	1	7	4	4	1	0	18 (6.5)	2
Stomach	0	0	0	0	0	5	7	4	1	17 (6)	0
Colo-Rectal	0	0	0	4	3	3	2	3	1	16 (6)	0
Lip, Oral cavity, pharynx	0	0	0	4	2	1	2	2	3	14 (5)	0
Ovary	0	3	2	0	4	1	0	1	1	12 (4)	1
Cervix	0	0	0	3	2	2	2	2	0	11 (4)	2
Liver	0	0	0	1	1	3	2	2	0	9 (3)	0
Bones, joints	0	4	1	1	1	0	0	0	2	9 (3)	0
Nasal cavity	0	0	0	0	1	1	4	1	0	7 (2.5)	0
Oesophagus	0	0	0	2	1	3	1	0	0	7 (2.5)	0
Leukemia/Myeloma	0	1	2	0	0	1	1	1	0	6 (2)	1
Bronchus/Lung	0	1	0	3	2	0	0	0	0	6 (2)	1
Brain	0	1	1	1	0	2	1	0	0	6 (2)	1
Urinary bladder	0	0	0	0	0	2	2	0	1	5 (2)	0
Kidney	0	0	1	0	1	0	0	0	0	2 (1)	0
Pancreas	0	0	0	0	0	0	1	0	1	2 (1)	0
Choriocarcinoma	0	0	0	1	1	0	0	0	0	2 (1)	0
Soft tissue sarcoma	0	0	1	0	0	0	0	0	0	1 (1)	0
Parotid	0	0	0	0	0	0	1	0	0	1 (1)	0
All sites	5	18	21	42	59	41	46	27	15	274 (100)	16

BCC=Basal Cell Carcinoma; SCC=Squamous Cell Carcinoma; NS=Non Saudi

Table 2 - Rank order and percentage frequencies of 274 female malignant tumors at ACH (1996-1999) compared with period (1987-1989).[2]

Rank Order	Site of malignancy	*Freq. (%) 1996-99 n=274	**Freq. (%) 1987-89 n=272
1	Breast	22	9 (2)
2	Skin	9	12.5 (1)
3	Thyroid	7	6 (5)
4	Non-Hodgkin's lymphoma	7	8 (3)
5	Uterus/Endometrium	7	0 (-)
6	Stomach	6	5 (6)
7	Colo-rectal	6	5 (6)
8	Lip, oral cavity, pharynx	5	4 (8)
9	Ovary	4	0 (-)
10	Cervix	4	4 (10)

*Percentage frequencies **Previous ranking in brackets

descending order. Breast cancer was the most common site seen, followed by skin cancer, thyroid, non-Hodgkin lymphoma, uterus and endometrium, stomach, colorectal and other malignancies. Cases below 10 years of age, were exclusively non-Hodgkin lymphomas. The rank order of the 10 most common malignancies were compared with the previously reported order (1987-1989) from the same laboratory for comparative reasons (Table 2), to highlight any obvious changes in pattern.

Discussion. Breast cancer ranked first among female malignancies 60 (22%) in this study. Fifty-three of the 60 patients (88 %) were Saudis. This percentage was more than double what was previously reported from the same center (Table 2). This present rank of breast cancer occupies the same position as the ranking from the Eastern Region of Saudi Arabia, according to the percentage of age standardized incidence rate for Saudi females.[3] Most of our breast cancer patients (43/60 or 72%) were below 50 years of age as shown in Table 1. This falls in line with the report from Al-Qassim in Saudi Arabia.[4] Patients' willingness to accept breast examinations and improved personal awareness of the condition through media enlightenment, as well as improved diagnostic screening techniques, have probably contributed to the rise in the number of cases seen in our region. In the US, it accounts for 32% of cancer in women, with a 1% to 2% annual rate of increased incidence since the 1960s: an average of 5 new cases are diagnosed, and one death related to breast cancer every 15 minutes in the US.[5] Though a majority of the patients with breast cancer in this study occurred in the 41-50 age bracket (23 or 38%), females below the age of 30 still presented with this condition. A screening program which is extended to the younger age group, might be worth implementing, especially as early breast cancer is potentially curable.

Skin cancer which ranked second in this report, was the most common female malignancy in the previous report.[2] Thyroid carcinoma occupied the third position, while in the previous report[2] it came fifth. In the Al-Qassim region of Saudi Arabia it was the most common form of malignancy observed in the female population, of which the predominantly papillary variety was attributed to probably iodine replacement.[4] Perhaps the histopathological types should be looked into and possible related epidemiological factors identified and dealt with accordingly. Non-Hodgkin Lymphoma was still high up in the ranking. Five out of the 18 confirmed cases were found in children below the age of 10 years. Leukemia, which was the 4th common malignancy in the previous report, was not common in the current review. There is no obvious explanation for this decrease in frequency. Studies in this direction are presently being undertaken.

Female gynecological malignancies of the uterus, ovary and the cervix occupied the 5th, 9th and 10th positions unlike in the previous report in which the uterus and ovary did not feature among the first 10 ranking. This recent finding of higher prevalence of ovarian cancer compared to cervical cancer falls in line with reports from other centres within the Kingdom,[4,6,7] though another study[8] found the prevalence of cervical cancer to be higher than that of ovarian cancer. The prominence of gynecological malignancies in this study probably reflects patients' change of attitude towards reporting gynecological problems to the hospital and their willingness to accept medical care. Further studies will need to be carried out to confirm this hypothesis. Stomach and colorectal malignancies maintained about the same ranking in the 2 studies. Colorectal carcinoma has been closely related to dietary habits.[9] The frequency in Saudi indigenes is low, compared to those of Western Europe and North America.[10,11]

The lip, oral cavity and pharyngeal carcinoma still occupied the 8th position as in the previous report.[2] The use of Shamma had earlier been implicated as a possible causative factor of oral cancer.[12] However, since the use of Shamma was banned since 1983[13] and the prevalence of oral cancer does not seem to be declining as revealed by the two studies, one should closely look for other possible predisposing factors.

Though only female malignancies were reviewed in this study, it appears that there is a need for the pattern of malignancies in the Kingdom to be

regularly reviewed. The outcome of this will be increased awareness, improve planning and the implementation of management strategies with a resultant improved health care delivery.

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