

Cancer in North West Pakistan and Afghan Refugees

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Abstract

The medical records of all patients attending the Institute of Radiotherapy and Nuclear Medicine (IRNUM), Peshawar during 1990 to 1994 were analysed to determine the frequency of most common cancers. There were 13,359 adults with biopsy proven cancers of these 10,371 belonged to the North West Frontier province (NWFP) and remaining 2988 were Afghan refugees. In NWFP there were 55% males and 45% females, while in Afghan refugees there were 59% males and 41% females. Patients whose histopathology was doubtful or not available were excluded from the study. The most common male tumours were skin, lymphoma, oral cancer, urinary bladder, lung, oesophagus, soft tissue, prostate, brain and myeloid leukemia. Among male Afghan refugees the most common cancers were oesophagus, skin, lymphoma, oral cancer, soft tissue, myeloid leukemia, stomach, urinary bladder, testis and colorectal cancer. Breast cancer was the most common cancer in women (JPMA 47:122, 1997).

Introduction

There are geographic variations in the incidence of cancer. Some tumours are more common in certain regions of the world, while other neoplastic diseases are uniformly distributed throughout the world. In developing countries, the pattern of occurrence of cancer remains to be clearly established¹ because clues to the aetiology of tumours may be provided by geographical distribution². Earlier reports³⁻⁵ on cancer pattern from this area has shown variable results and the reliability of this data has been questioned. The aim of the present study was to analyse all patients referred to IRNUM and establish the occurrence of cancer in the North West of Pakistan (N.W.F.P.) and Afghan refugees.

Materials and Methods

The Institute is located in Peshawar, a town bordering Afghanistan. It is the only hospital in the province where radiation and nuclear medicine facilities are available under one roof. Majority of cancer patients are referred to this hospital for treatment. Accurate and reliable data regarding name, age, sex, the site and nature of cancer were collected, analysed and coded according to WHO6 before entry into computer. Only biopsy proven cancer cases were included in the study. Leukemia was diagnosed using blood tests and biopsy of the bone marrow. The most common cancers in men and women were determined on the basis of their percentage. All cases with inadequate information were excluded.

Results

A total of 13,359 patients were included in this study; of these 10,371 were adults from NWFP, while 2988 were Afghan refugees. Males and females of NWFP were 5707 and 4664 respectively while amongst Afghan refugees, 1755 were males and 1233 females. In NWFP cases skin cancer was the commonest cancer in males (8.9%) followed by lymphoma (8%), oral cancer (7.1%), bladder (5.4%), lung (4.9%), oesophagus (4.6%) (Table I). In male refugees oesophagus was the commonest cancer

(16.6%) followed by skin(13.3%), lymphoma (8.7%), oral cancer (4.4%), soft tissue (4.0%), myeloid leukemia (3.6%) (Table I).

Table I. The most common malignant tumours in adult males of NWFP and Afghan Refugees.

S.No.	Site	Nos. of patients in NWFP (5707)		Nos. in Afghan (1755)	
		No	(%)	No.	(%)
1.	Skin	507	(8.9)	233	(13.3)
2.	Lymphoma (NHL and HD)	459	(8.0)	152	(8.7)
3.	Oral cancer	408	(7.1)	77	(4.4)
4.	U. Bladder	310	(5.4)	58	(3.3)
5.	Lung	282	(4.9)		
6.	Oesophagus	262	(4.6)	291	(16.6)
7.	Soft tissue	228	(4.0)	70	(4.0)
8.	Prostate	218	(3.8)	44	(2.5)
9.	Brain tumour	208	(3.6)	41	(2.2)
10.	Myeloid leukemia (acute and chronic)	202	(3.5)	63	(3.6)
11.	Larynx	148	(2.6)		
12.	Hypopharynx	147	(2.6)		
13.	Bone	124	(2.2)	44	(2.2)
14.	Stomach			59	(3.4)
15.	Testis			56	(3.2)
16.	Colorectal			45	(2.6)

In females breast cancer was the commonest (20.8%) in NWFP, followed by skin, ovary, oral carcinoma, oesophagus and cervix (Table II). In femala refugees breast cancer was the most common cancer (20.8%), followed by oesophagus, skin, cervix, lymphoma ovary (Table II).

Table II. The most common malignant tumours in adult females of NWFP and Afghan Refugees.

S.No.	Site	No. of patients in NWFP (4664)		No. in Afghan (1233)	
		No.	(%)	No.	(%)
1.	Breast	970	(20.8)	210	(17)
2.	Skin	354	(7.6)	92	(7.5)
3.	Ovary	286	(6.1)	59	(4.8)
4.	Oral cancer	195	(4.2)	31	(2.5)
5.	Oesophagus	189	(4.1)	161	(13.1)
6.	Cervix	184	(3.9)	60	(4.9)
7.	Lymphoma (NHL and HD)	170	(3.6)	59	(4.8)
8.	Uterus	141	(3.0)	32	(2.6)
9.	Myeloid leukemia (acute and chronic)	141	(3.0)	33	(2.7)
10.	Soft tissue	140	(3.0)	36	(2.9)
11.	G. bladder	130	(2.8)		
12.	Hypopharynx	097	(2.1)	18	(1.4)
13.	Thyroid	078	(1.7)		
14.	Bones			22	(1.7)
15.	Stomach			20	(1.6)

Discussion

Skin cancer is the leading cancer in males of NWFP, while it ranks second in women. It is the second common cancer in male and the third in female Afghans. In Rawalpindi⁷, it is the second common cancer in women but fourth among men. The frequency of this cancer reported from South⁸ is not high. The higher frequency of skin cancer in the North and lower in the South of the country points to the possible North South gradient⁸. The skin colour of the people in this region as well as Afghanistan is lighter. Majority of the people also live at higher altitude are outdoor workers. Skin cancer is reported to be the most common tumour in Afghanistan⁹ and Iran^{10,11}. Skin cancer is not included in the registries of some countries because it is detected early and is cured. Basal cell carcinomas and squamous cell carcinomas in this region present late and therefore, measures have to be taken to prevent and detect it early. Breast cancer is the leading female malignancy in Pakistan^{4,5}, including NWFP. It is the most common cancer in Afghan women also. More than 30% of the women in their fourth decade

of life are reported to be suffering from breast cancer in Rawalpindi¹². The probability of an average Pakistani woman to seek treatment for breast cancer by the age of 65 years is one to two percent¹³. Ethnically, majority of the people in the North West of Pakistan and Afghanistan ate the same. Breast cancer is less common in the developing countries, but in this study the pattern of occurrence is the same as in some Western countries¹⁴. In India it is the second common cancer in women¹⁵. Lymphoma is the second common cancer in men and seventh in women of NWFP. It is the seventh female malignancy among women in India also¹⁵. The increased incidence compared to some countries is not clear and further studies are needed..

Oesophageal carcinoma is the sixth commonest cancer in men in local population, while it is the leading one in the Afghans. Both, NWFP and Afghanistan come in the oesophageal cancer belt area which stretches from Caspian Sea to the North of China. It is not clear whether it is due to dietary factors or other environmental factors¹⁶. Oesophageal cancer is almost always in the adult Afghans and the exposure to the cancer producing agents is probably during childhood.

Oesophageal cancer is however, rare in Southern province of Pakistan. It will be interesting to know the frequency of cancer in the Afghan refugees who are born in Pakistan and who return to their own country. In India it is the second common cancer in males and the third in females¹⁵. In Shanghai⁷ it is the fourth common cancer in men and the seventh in females. In Japan carcinoma of stomach is more common than that of oesophagus¹⁸. Oral cancer is the third common cancer in men and fourth in women of this province. It is a tobacco related cancer. Men and some women use "Naswar"¹⁹ which is tobacco mixed with ash and is kept in the buccal cavity between lips and alveolus. Oral cancer is more common in the South⁷. In Karachi, for example, it is the third common cancer in males (21.3%) and the second in females (18.7%). The frequency of this cancer in the South has decreased over the years in both the sexes²⁰. Oral cancer is one of the ten most common cancers worldwide. In developing countries, it is the third most common cancer. In Sri Lanka, India, Pakistan and Bangladesh oral cancer out numbers others. In parts of India oral cancer represents over 50% of all cancers²¹. In the developed world it ranks eighth, although the ranking varies between countries. In France, for example, it is the third most common male malignancy²². Patients in Pakistan present in late stages, therefore measures have to be taken to prevent it and detect it early. This study is in sharp contrast to the early reported⁴ study from this area where the frequency of bone cancer in North West of Pakistan was shown to be high enough to be included among the ten most common cancers. Bone cancer ranked fifteenth among males and nineteenth among females in the present study. Proper hospital based or population based registries are not available in Pakistan, but very useful information on cancer pattern can be derived from hospital based studies which are the only referral centres in the country.

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