

## **Sex Distribution of Solid Malignant Tumours in Basrah Retrospective Study**

Mohammed K Al-Wiswasy, FRCPath\*  
Rafeef A Al-Saddi, FICMS (Path)\*

**Objective:** The present study was undertaken to compare the frequencies of various malignant tumours in pre and post 2<sup>nd</sup> Gulf war (1991) periods in both sexes and to find the commonest ten tumours in the two study periods in both sexes.

**Method:** A retrospective descriptive approach was used and data were obtained from the available histopathological reports. Two periods were studied from 1984-1990 and 1992-1998. The commonest tumours were outlined in both sexes in the two periods.

**Results:** The commonest tumours in females and males were the same in the two periods, breast cancer for females and urinary bladder cancer for males but the rest of the list had been changed dramatically in both sexes.

**Conclusion:** There has been a change in pattern of malignancies post 2<sup>nd</sup> Gulf war in both sexes in our community and there is a need for further studies to evaluate the link of changing pattern of malignancies to various aetiological factors.

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It may be very difficult to prove a link between a particular event and cancer in human, the epidemiological data which would allow such a link to be established is often limited, if available at all. However, it has been shown clearly that there has been an increase in malignant solid tumours in Basrah province after second Gulf war<sup>1,2</sup>.

This study was carried out to determine the commonest malignant tumours in both sexes in Basrah, whether there is any changing pattern in tumours predominance pre and post second Gulf war, to compare these results with other parts of Iraq and in other countries regarding the commonest tumours in both sexes.

### **METHODS**

A retrospective study was carried out. Analysis of the available histopathological reports from histopathological laboratories have been carried out (Basrah teaching hospital histopathological laboratory and Al Wiswasy private laboratory, as no cancer registry of Basrah is available). No available records have been obtained before 1984,

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\* Basrah Medical College  
Basrah  
Iraq

so two periods have been chosen for a matter of comparison, seven years before 1991 second Gulf war, 1984-1990 and seven years post second Gulf war, 1992-1998.

Only primary solid malignant tumours were included and all recurrent and metastatic tumours were excluded. The patients were classified according to their sex and site of the tumour. Comparison has been made between total number of tumour registered in both sexes pre and post second Gulf war.

Also the commonest ten tumours have been determined in both sexes pre and post second Gulf war.

## RESULTS

More than 25,000 reports of histopathology have been reviewed, 3865 reports of primary solid tumours have been included in the study periods. Figure 1 shows the sex distribution of tumours pre and post second Gulf war.

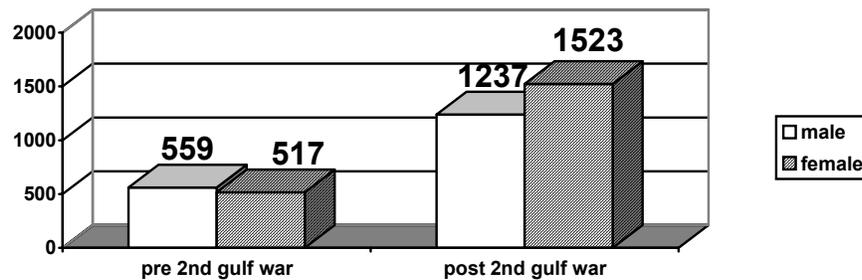


Figure 1. Total number by sex in pre and post 1991 second Gulf war.

Table 1. Tumours distribution in females according to site in the two study periods

Organ	Pre*	%	Post*	%	Organ	Pre*	%	Post*	%
Breast	148	28.6	449	29.5	Bone	12	2.3	33	2.2
Urinary bladder	43	8.3	125	8.2	Soft tissue	11	2.1	22	1.4
Lymphoma	35	6.8	102	6.7	Oral cavity	6	1.2	16	1.0
Larynx	23	4.4	61	4.0	Gall bladder	3	0.6	13	0.9
Colorectal	33	6.4	70	4.6	Liver	5	1.0	5	0.3
Uterus	39	7.5	168	11	Pancreas	2	0.4	17	1.1
Ovary	22	4.3	75	4.9	Maxilla	2	0.4	4	0.3
Skin	38	7.4	85	5.6	Anus	0	--	4	0.3
Stomach	20	3.9	48	3.2	Small intestine	2	0.4	11	0.7
Esophagus	8	1.5	21	1.4	Tongue	7	1.3	6	0.4
Thyroid	8	1.5	52	3.4	Brain and spine	13	2.5	17	1.1
Kidney	6	1.2	34	2.2	Post nasal	1	0.1	4	0.3
Pharynx	8	1.5	21	1.4	Others	14	2.7	35	2.3
Lung	8	1.5	25	1.6	Total	517		1523	

\*Second Gulf War

The total number of tumours in males (559) was higher than in females (517) in pre second Gulf war period while in post second Gulf war period, the total number is higher in females (1523) than males (1237).

Table 1 shows tumour distribution in females according to site in the two periods. The tumours which show remarkable increase post second Gulf war period were thyroid (550% rise), kidney (460% rise), uterine (330% rise) and pancreatic tumours (325% rise).

Breast cancer remains the commonest cancer in females in the two periods. But uterine tumours, lymphoma, ovarian and thyroid tumours acquire a higher position in the rank of ten commonest tumours in post second Gulf war period.

Table 2 shows tumours distribution in males according to site in the two periods. The tumours which show remarkable increase post second Gulf war period were pharynx (575% rise), colorectal (270% rise), prostate (263% rise), skin (140% rise) and lymphoma (190% rise).

**Table 2. Tumours distribution in males according to site in the two study periods**

Organ	Pre*	%	Post*	%	Organ	Pre*	%	Post*	%
Urinary bladder	136	24.3	238	19.2	Pharynx	4	0.7	27	2.2
Skin	42	7.5	122	9.9	Oral cavity	6	1.1	11	0.9
Larynx	72	12.9	126	10.2	Gall bladder	3	0.5	5	0.4
Lung	38	6.8	91	7.4	Liver	4	0.7	11	0.9
Lymphoma	53	9.5	142	11.5	Pancreas	6	1.1	20	1.6
Colorectal	30	5.4	111	8.9	Maxilla	2	0.4	11	0.9
Stomach	37	6.6	80	6.5	Anus	1	0.2	5	0.4
Prostate	11	2	40	3.2	Small intestine	3	0.5	5	0.4
Soft tissue	21	3.8	39	3.1	Breast	8	1.4	6	0.5
Kidney	11	2	18	1.5	Thyroid	2	0.4	5	0.4
Esophagus	19	3.4	18	1.5	Brain and spine	3	0.5	6	0.5
Bone	15	2.7	24	3.4	Postnasal	0	0	8	0.6
Tongue	7	1.3	12	1	Others	25	4.5	38	3.1
					Total	559		1237	

*\*1991 second Gulf War*

The urinary bladder cancer remains the commonest malignant tumour in males in both periods, but lymphoma, colorectal, bone and prostatic cancer acquire a higher position in the list of ten commonest tumours in post second Gulf war period.

## **DISCUSSION**

Information on cancer occurrence in the population is essential to any national programme of cancer control<sup>3</sup>.

This study shows that breast cancer had remained the commonest tumour in females in Basrah province and this is similar to other parts of Iraq<sup>4,5</sup>. This is also true for developed countries and in large number of developing Muslim countries like Egypt, Tunisia, Sudan, Iran, Kuwait and Pakistan in contrast to cervical cancer which forms the commonest tumour of females in most developing countries<sup>3</sup>. There has been remarkable increase in uterine cancer and mainly cervical carcinoma, which is found by other researchers<sup>6</sup>. The increment of cervical cancer may be related partly to decrease standard of living due to the effect of embargo as uterine cervical cancer is more common in the low socioeconomic class<sup>7</sup>.

Thyroid tumours also increased remarkably post 1991 second Gulf war and this may be related to the effect of exposure to depleted uranium<sup>8</sup>.

This changing pattern of female malignancies was also observed in neighboring countries as Saudi Arabia<sup>9,10</sup>.

In spite of the schistosomiasis control program that have been carried out in the country, urinary bladder cancer is the commonest tumour in male in our province in the two study periods, as schistosoma play a major role in its causation<sup>11</sup>. In other parts of Iraq, lung cancer is the commonest and this is also true for most countries world wide, while prostatic cancer is seen in more developed countries<sup>(3,4,5,12)</sup>. In our province lung cancer rank the sixth within the commonest ten tumours in male, this may be explained that some of our patients diagnosed on radiological or cytological basis with no histopathological confirmation and so referred directly for treatment.

Skin tumour also shows a remarkable increase that needs to be investigated thoroughly to determine the causative agent. This observation also noted in other parts of the country<sup>4,5</sup>.

Colorectal cancer shows a remarkable increase in our province and could not be explained as people in Basrah consume a lot of date, which is full of fibers, so there must be other aetiological factors that need to be investigated. Prostatic tumour shows a mark increase that may be attributed to radiation exposure.

## CONCLUSION

**It is clear that there has been a change in cancer occurrence post second Gulf war, whether it is related to our environment only, for example, exposure to depleted uranium and other chemicals introduced or its due to the effect of embargo or post war trauma or it may be a combination of all. Further studies are recommended to establish a true link between these factors and cancer development. Also there is a need to continue reviewing the pattern of malignancy from time to time in order to update planning on prevention and treatment measures.**

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