DEPLETED URANIUM AND HEALTH OF PEOPLE IN BASRAH: AN EPIDEMIOLOGICAL PERSPECTIVE.

III.INCIDENCE AND PATTERN OF MALIGNANT DISEASES (EXCLUDING LEUKAEMIAS) DURING 1990-1997.

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ABSTRACT

Analysis of the histopathological reports issued by the department of pathology of Basrah Saddam Teaching Hospital for the years 1990 & 1997 was carried out. Only newly diagnosed histopathologically confirmed cases were included in the study. There was a marked rise (160%) in the reported cases of uterine cancers (mainly cervical cancers) in 1997 compared to 1990 (39 cases in 1997 compared to 15 1990). There was a 143% rise in thyroid cancer (17 in 1997 compared to 7 in 1990), 102% rise in breast cancer (99 in 1997 compared to 49 in 1990), and 82% rise in lymphomas (40 in 1997 compared to 22 in 1990). The five leading malignancies in Basrah in 1997 were malignant diseases of breast (18.2%), bladder (8.6%), lymphomas (7.4%), utrine (7.2%), and skin cancers (7.0%), while those in 1990 were malignant diseases of bladder (11.9%), skin (11.1%), breast (10.0%), lung (6.0%) & larynx (5.7%). There was shift in the age distribution of

cancer cases towards younger age groups. In 1990 only 22.7% of cases were among young adults (15-44 years), compared to 31.6% of cases in `1997.

INTRODUCTION

In preceding papers it was shown that the use of depleted uranium by the U.S. troops and their allies during their aggression on Iraq in 1991 has resulted in significant increase in the incidence of malignant diseases *(including leukaemias)* among children in Basrah. The fact that depleted uranium was used has been confirmed by measuring the levels of radioactivity of samples taken from different samples from Basrah[2,3]. Studies from other parts of the world have shown that exposure to unusually high levels of ionising radiation could increase the risk of solid tumours among adults as well, for example cases of thyroid[4], prostate[5] and larynx[6]. Thus it was decided to carry out a study to test the hypothesis that following the 1991 aggression there has been an increased incidence of malignant diseases among all groups of population in Basrah, with specific reference to solid tumours.

METHODOLOGY

Analysis of all histopathological records issued by the Dept. of Histopathology of Saddam Teaching Hospital during the period from 1990 to1997 was carried out. The Department is considered the sole reference laboratory for histopathological examination of samples sent from hospitals and clinics in Basrah. Cases of leukaemias have been excluded because those among children are usually registered at the Main Maternity and Children Hospital in Basrah and has been studied and presented in the preceding paper[7]. Leukaemia cases among adults are

usually reported at a different unit and were not included in this study. Following the preliminary screening of cases, it was decided to present the results for two reference years 1990 and 1997. The year 1990 reflected the incidence of cancer before the aggression while 1997 was selected because it represents the latest available data at the time of conducting the study which would show any noticeable increase, if any, of cancer cases. Only newly diagnosed cases were, of course, included in the analysis.

RESULTS

Table 1 shows the incidence of cancer cases in Basrah according to their sites in 1990 and 1997. In total 544 cancer cases were recorded in 1997 compared to 488 in 1990 i.e. a percentage rise of about 11.5%. The cancer which showed remarkable percentage rise in 1997 compared to 1990 were those of uterus (160%), thyroid (143%), breast (102%) and lymphomas (82%). It can also be seen from the table that the five leading cancers in 1997 were those of the breast, bladder, lymphomas, uterus and skin. The corresponding leading cancers in 1990 were those of bladder, skin, breast, lung and larynx.

Table 1. ***Distribution of cancer cases in Basrah according to site 1990 & 1997.***

SITE	1990		1997	
	No.	%	No.	%
Bladder	58	11.9	47	8.6
Breast	49	10.0	99	18.2
Skin	54	11.1	38	7.0
Lymphoma	22	4.5	40	7.4
Iung	30	6.0	18	3.3
Larynx	28	5.7	23	4.2
Colon & rectum	26	5.3	27	5.0
Stomach	25	5.1	19	3.5
Bone	17	3.5	17	3.1
Uterus	15	3.1	39	7.2
Liver	15	3.1	18	3.3

Ovary	12	2.5	9	1.7
Soft tissue	12	2.5	11	2.0
Oral cavity	12	2.5	4	0.7
Kidney	11	2.3	7	1.3
Pharynx	11	2.3	16	2.9
Prostate	9	1.8	4	0.7
Brain	9	1.8	13	2.4
Thyroid	7	1.4	17	3.1
Others	66	13.5	78	14.3
Total	488	100.0	544	100.0

Table 2. *Age distribution of cancer cases in Basrah in 1990 & 1997.*

Age (years)	1990	1997
< 5	0.3	0.9
5-9	1.5	1.5
10-14	2.5	0.9
15-24	4.9	4.7
25-34	6.4	9.6
35-44	11.4	17.3
45-54	18.7	20.1
55-64	31.3	22.7
65+	23.0	22.2
Total	100.0	100.0

Table 2. Shows the proportional age distribution of cancer in the two reference years. In 1990 only 22.7% of cases were among young adults (15-44 years) compared to 31.6% of cases in 1997 among the same age group.

DISCUSSION

The present study confirmed that there has been a noticeable increase in the incidence of cancer cases in Basrah following the 1991 agression on Iraq. Causes of

cancer are multifactorial which involve in addition to inherited predisposition, such environmental factors as chemicals, ionising radiation and oncogen virus[7]. These factors would induce carcinogenesis directly or indirectly by changing the cell's genome. In Basrah all such factors might have played a role in increasing the incidence of cancer following 1990. However, the sites of cancer which showed increased incidence and the detection of such increase after four to five years of the war (corresponding to the latent period of cancer) suggest that ionising radiation has played an important role in development of cancer in this area. It is well recognised, for example, that radiation induces functional a synchronism of the follicular structure of the thyroid gland which would result in neoplastic changes[4]. The present study showed increased incidence of thyroid gland, a finding consistent with what has been observed in Chernobyl and among workers in uranium minors[6]. Uranium from the environment enters the human body by ingestion with food and drink and by respiratory airborne uranium containing air particles or aerosoles[8].

If that is the case, it would be predicted that on the long run, an increase in the incidence of cancer of the lung and bones is predicted. It is recommended that an urgent comprehensive intervention programme is required through dumping of contaminated sources of radiation in the area *(tanks, artillery… etc)* is to be carried out as soon as possible. Such programme should also include promoting healthy life style such as increased intake of nutrients, which contain anti carcinogenic factors and reducing exposure to other risk factors *(chemical pollutants, smoking and other carcinogens).*

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