

Pattern of cancer mortality in Thi Qar governorate

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Abstract:

This paper reports the results of a study carried out in Thi Qar governorate during 2007. It aims at quantifying the burden of cancer in terms of number of deaths distribution and specific rates. The data were obtained from all death registration offices in the governorate and covered age, sex, type of cancer, residence and year at which death took place. Six years were covered; 1985, 1986, 1995, 1996, 2005 and 2006. These years were chosen on the basis of feasibility and to allow presentation of any time trends in cancer mortality. The results showed that cancer represent a significant cause of death in Thi Qar governorate. It accounts for 7.3% of all deaths in the studied years with clear increase in both cancer specific mortality rate and cancer proportional mortality ratio with time. Also, cancer deaths were more frequent among males than among females. The geographical distribution shows no major variation except some excess in Nassiriyah city. Five cancers (urinary bladder, lung, Leukaemias, breast and lymphomas) accounted for more than half the deaths recorded in Thi Qar. It is highly recommended that cancer registration is enhanced in Thi Qar and more attention is given to the quality of death registration.

Key words: Cancer, Thi Qar, Cancer mortality, time trends

ملخص البحث:

يعرض البحث الحالي نتائج بحث اجري في محافظة ذي قار خلال عام ٢٠٠٧ ويهدف إلى قياس العبء السرطاني بمعايير الوفيات الناشئة عنه. تم الحصول على المعلومات من جميع مكاتب تسجيل الوفيات في المحافظة وأطرافها وغطت المعلومات ست سنوات: ١٩٨٥، ١٩٨٦، ١٩٩٥، ١٩٩٦، ٢٠٠٥، ٢٠٠٦ وقد اختيرت السنوات لغرض السماح برسم صورة لمدى ونمط الوفيات السرطانية زمانيا ومكانيا. أظهرت النتائج إن وفيات السرطان تمثل جزء مهما من مجموع الوفيات في المحافظة إذ شكلت حوالي ٧,٣% من مجموع الوفيات المسجلة أو ٣٠,٧% لكل ١٠٠٠٠٠ نسمة مع ميل إلى زيادة أهميتها مع مرور الزمن. كذلك كانت الوفيات أعلى بين الذكور مما هي بين الإناث وأعلى في مدينة الناصرية ومحيطها مما هي في بقية أفضية المحافظة وكانت خمسة أنواع من السرطان (المثانة، الرئة، ابيضاض الدم، الثدي، والغدد اللمفاوية) قد سببت أكثر من نصف وفيات السرطان. ويوصي الباحثان بضرورة إنشاء تسجيل سرطاني والاهتمام بالبحث العلمي الفرقي في مجال السرطان.

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Introduction

Cancer is currently considered as an important contributor to morbidity, mortality and worry of people all over the world (1). It stands as one of the prime causes of death in developed countries and is a growing problem in developing countries (1, 2).

Understanding the magnitude of cancer, its distribution and time trends may help policy makers and care providers to plan effective programmes for prevention and treatment. Statistics on cancer mortality is not sufficient by itself to completely understand the extent of the burden of cancer but these statistics could be used to calculate proxy measures of cancer burden at population level (2).

Death is undebatable fact but the accuracy of recorded cause of death is amenable to suspicion particularly in places where health information systems are not well managed. This is true for cancer and for death in the very young and very elderly. Death registration in Iraq is officially required for burial and other purposes. A long standing death certification and registration is in effect in Iraq and a high rate of completeness is expected. Errors are likely to occur in recording the cause of death. Cancer is unlikely to be written as the cause of death when a person is not having a cancer, but cancer may be missed as the underlying cause of death or a deceased person had cancer but

that cancer is not the cause of death. All these could lead to underestimation of the role of cancer as a cause of death. However, since cancer mortality is a product of both incidence and fatality and cancer is relatively fatal disease, it can be assumed that mortality gives some indication of cancer burden. Previous works suggest that death registration in Iraq is reliable to a great extent (3, 4, 5).

Despite the interest shown by both professionals and lay people in cancer, no previous study has tackled this important health problem in Thi Qar.

This paper presents estimates on cancer mortality in Thi Qar governorate over selected years and across different administrative units.

Methods

Death registration offices in Nassiriyah city and all districts and sub districts were examined and used as sources of data in the present study. Every death registered was reviewed and all deaths for which cancer was written as the cause were compiled. Name, age at the time of death, sex, cause of death (type of cancer by site), place of residence and year were recorded. In addition, the total deaths from all causes in each year and for each administrative unit were obtained. The study covered six years; 1985, 1986, 1995, 1996, 2005 and 2006. The number of years was dictated by the time available to the study

and the choice of years was made to facilitate the exploration of time trends in mortality over long period of time.

A total of 2213 deaths were identified as being related to cancer and used in the statistical analysis. Estimate of Thi Qar population were obtained from the governmental health authorities. Frequency distribution, cancer specific rates and age standardized mortality rates (using World population as standard (2)) were calculated

Results

Distribution of cancer deaths by age and sex

Table 1 shows that the number of deaths due to cancer was higher among males as compared to females. The distribution with age shows that in children aged <15 and people aged 55 and above there is excess of deaths among males, while excess of deaths among females is noticed in the age range of 15 to 54 years.

Distribution of cancer deaths by years and sex

In all years (Table 3), nearly three fifths of cancer deaths were among males and this is consistent in all years except in the year 2006 when the share of females has increased to 53.8%. But this change does not affect the overall pattern ($P>0.05$).

Cancer mortality rates

Table 4 summarizes specific mortality indicators for Thi Qar governorate during the studied years. The results show clear increase in cancer specific

mortality rates from 30.5 in 1985 to 33.7 in 2006 (or about 10.5% increase) and cancer proportional mortality ratio from 4.5% in 1985 to 9.9% in 2006. Part but not all of this relative increase in proportional mortality ratio may be due to reduction in crude death rate.

Table 5 shows the cancer specific mortality rates during the 1980s, 1990s and the first decade of the 21st century. Many cancers showed a rising trend of mortality (lung, breast, liver, CNS, stomach, uterus, bones, prostate and esophagus). Some other cancers showed declining trend (urinary bladder, larynx, pancreas and pharynx) the remaining showed no consistent trend with time.

Geographical distribution

Table 6 shows cancer mortality rates in different geographical (administrative) areas. The rates are range from 29.8 per 100 000 in Rifaie district to 39.4 per 100000 in Nassiriyah city which had relatively higher rate than all other areas of the governorate. in Nassiriyah city which had relatively higher rate than all other areas of the governorate.

Discussion

The present study is aimed at estimating the magnitude of cancer mortality in Thi Qar governorate as a part of detailed analysis of data available on cancer incidence, mortality and survival in Southern Iraq. This is an enormous task, which we have endeavored. To estimate the burden of cancer mortality we require reasonably accurate data on the number and causes of death. Death as fact is undoubtful event and in Iraq death certification and registration is needed for burial of deceased persons. This means that the registered deaths are almost valid reflection of the extent of death in the population. The problem lies with the cause of death. Ascertainment of cause of death is reliable when the event of death takes place at hospital. However, when death occurs at home, some inaccuracies in the documentation of cause of death are expected. In such situation it is likely that some cancer cases are not correctly assigned the correct cause of death with subsequent under estimation of the extent of cancer as a cause of death. Nevertheless, this study is a pioneer attempt to quantify cancer as a cause of death in Thi Qar governorate. The study serves as a basis for the future estimation of cancer time trends and for measuring the effects of any preventive programmes. In general, the pattern of cancer mortality in Thi Qar is not very

much different from the pattern reported recently for Basrah governorates but relatively higher than that reported for Missan governorate by other researchers^(4, 5). The estimated average cancer mortality rate in Thi Qar for the last 20 years was 31.7 per 100 000 population compared to 30.9 per 100 000 in Basrah and 24.9 per 100 000 In Missan for the same period.

Cancer mortality was higher among males as compared to females. This may reflect a relatively high incidence rate of cancer in males or higher case fatality ratio. It is difficult to verify these hypotheses but recent studies in Basrah⁽³⁾ indicated that the incidence rate of cancer is higher among females. The higher mortality rates among males is, therefore, more likely to have reflected differential higher case fatality associated with specific cancers among males, like lung cancer which is more common among males and relatively more fatal. The relative lower mortality among females could reflect also the effect of breast cancer, which is much more common among females, but relatively have better five-year survival.⁽⁶⁾

Given a relatively rising incidence of cancers, which are potentially preventable, we stress the role of primary prevention, early detection as well as treatment and suggest periodic careful evaluation of the services provided to cancer patients. Cost-effectiveness

analysis plays a role for this purpose, which should be generalisable and comparable across various interventions including both currently delivered and potentially feasible ones. Estimating the magnitude of cancer mortality and incidence is a key input for setting research and intervention priorities. Combined with costs of each intervention, mortality and incidence estimates provide a basis for effectiveness calculation in cost-effectiveness analysis of cancer control programmes. ^(7, 8) The ultimate aim of any cancer control programme should be the reduction of cancer risk and cancer mortality. This requires among other things, effective, cost beneficial and scientifically sound health care.

Age wise, cancer mortality rate rise sharply after the age of 25 years reaching its peak at the age of 65 years and above. This trend is in agreement with the pattern known for cancer. (1, 2). Geographically, the mortality rates were similar in all districts of the governorate except a relatively higher rate in Nassiryiah district. This higher mortality rate in Nassiryiah might be due to real higher risk of death, better ascertainment and registration of cancer deaths or both. At this stage, it is difficult to confirm which of these factors is responsible for difference.

Across time there was rising trend of cancer specific mortality rates and cancer proportional mortality

ratio (see Table 4). This means that cancer as a cause of death has increased over years both in absolute terms and as a proportion from all causes of death and therefore cancer is gaining increasing significance as a public health problem. This trend is similar to results reported in Basrah and Missan. ^(4, 5) Similarly, some cancer showed increasing mortality rates over years like cancers of lung, stomach, central nervous system and lymphomas. Mortality rate of bladder cancer showed substantial reduction over time despite the fact that it is still the leading cause of cancer death in Southern Iraq. Other cancers showed inconsistent patterns with time.

In conclusion, the results of the present study indicated that cancer is a significant cause of death, its relative share is increasing with time and needs more organized efforts to further study the problem and limits its risk at population level. The researchers highly recommend the establishment of population-based cancer registration in Thi Qar governorate to document incident cases and deaths supported by multidisciplinary research work.

Pattern of cancer mortality in Thi Qar governorate

Table (1): Frequency distribution of cancer deaths in Thi Qar governorate for selected years by age and sex

Age (years)	Males		Females		Total	
	No.	%	No.	%	No.	%
<15	66	5.2	42	4.7	108	5.0
15-24	40	3.2	49	5.5	89	4.1
25-44	130	10.3	178	20.1	308	14.3
45-54	215	17.0	173	19.5	388	18.1
55-64	299	23.7	187	21.1	486	22.6
65 and above	511	40.5	258	29.1	769	35.8
Total	1261	100.0	887	100.0	2148*	100.0

* 65 deaths were without record of age

$X^2 = 64.25$ $df = 5$ $P < 0.001$

Table (2): Distribution of cancer as cause of death in selected years in Thi Qar governorate by sex

Type of cancer(Sites)	Males		Females		Total Number	% out of total
	No.	%	No.	%		
Urinary bladder	348	69.6	152	30.4	500	22.6
Lung	266	80.6	64	19.4	330	14.9
Leukaemias	95	59.4	65	40.6	160	7.2
Breast	5	3.4	140	96.6	145	6.6
Lymphomas	78	61.4	49	38.6	127	5.7
Larynx	76	66.1	39	33.9	115	5.2
Liver	58	52.7	52	47.3	110	5.0
CNS	64	61.0	41	39.0	105	4.8
Colon-rectum	52	52.5	47	47.5	99	4.5
Stomach	47	52.2	43	47.8	90	4.1
Uterus-cervix	-	0.0	57	100.0	57	2.6
Bones	29	54.7	24	45.3	53	2.4
Pancreas	21	51.2	20	48.8	41	1.9
Prostate	37	100.0	-	0.0	37	1.7
Secondary of unknown origin	21	56.8	16	43.2	37	1.7
Thyroid gland	9	36.0	16	64.0	25	1.1
Oesophagus	12	60.0	8	40.0	20	0.9
Ovary	-	0.0	18	100.0	18	0.8
Pharynx	9	60.0	6	40.0	15	0.7
All other sites	75	58.1	54	41.9	129	5.8
Total	1302		911		2213	100.0

Table(3): Distribution of cancer deaths in Thi Qar governorate by years and sex

years	Males		Females		Total	
1985	149	60.1	99	39.9	248	100.0
1986	149	60.6	97	39.4	246	100.0
1995	205	59.2	141	40.8	346	100.0
1996	225	60.3	148	39.7	373	100.0
2005	290	61.4	182	38.6	472	100.0
2006	284	53.8	244	45.2	528	100.0
Total	1302	58.8	911	41.2	2213	100.0

$$X^2 = 7.71$$

$$df = 5$$

$$P = 0.173$$

Table (4): Total population, total deaths, cancer deaths and specific death rates for selected years in Thi Qar governorate

Year	Total population	Total Deaths	Crude death rare	Cancer death s	Ca specific death rate	Cancer proportional mortality ratio (%)
1985	812 321	4575	5.6	248	30.5	4.5
1986	837 445	4456	5.3	246	29.4	5.5
1995	1101 573	5328	4.8	346	31.4	6.5
1996	1135 643	5271	4.6	373	32.8	7.1
2005	1519 893	5341	3.5	472	31.1	8.8
2006	1566 901	5347	3.4	528	33.7	9.9

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Table (5): Cancer-specific mortality rates per 100000 by years in Thi Qar governorate

Cancer	1985-1986	1995-1996	2005-2006
Urinary bladder	8.5	8.4	5.5
Lung	3.0	4.7	5.7
Leukaemias	2.5	2.1	2.3
Breast	1.7	1.8	2.5
Lymphomas	1.6	2.2	1.6
Larynx	2.3	1.5	1.5
Liver	1.5	1.4	1.8
CNS	0.9	1.2	2.1
Colon-rectum	1.2	1.9	1.2
Stomach	1.0	0.7	1.9
Uterus-cervix	0.5	0.9	0.9
Bones	0.6	0.8	0.8
Pancreas	0.7	0.5	0.5
Prostate	0.4	0.6	0.6
Secondary of unknown origin	0.7	0.6	0.4
Thyroid gland	0.4	0.3	0.4
Oesophagus	0.2	0.2	0.4
Ovary	0.1	0.6	0.2
Pharynx	0.5	0.2	0.1
All other sites	1.6	1.4	3.0
All Sites	29.9	32.0	32.4

Table (6): Cancer mortality rates by major geographical areas of Thi Qar governorate in 2006

Geographical Area (Districts)	Population	Cancer deaths	Cancer mortality rate per 100000
Nassiriyah	576116	227	39.4
Rifaie	325638	97	29.8
Shatra	354922	106	29.9
Suq Al-	247874	78	31.5
Shiukh	62351	20	32.1
Chibayish			
All	1 566 901	528	33.7

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