Original Article

Cancer in Maysan: Mortality, Pattern, and Demographic Characteristics during the Last 4 Decades

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ABSTRACT

Cancer is considered as one of the serious diseases recognized by the abnormal cells division which can be invading normal cells and tissues. People can be affected by cancer at any age; the risk of cancer is increased with the age. Carcinogenesis agents may be physical or chemical. The cancer treatment and curable is depended on the cancer type, location, and stage. The study aimed to estimated cancer mortality rate and trend in Maysan, Iraq during 1985- 2020. A cross-sectional study reviewed the death from cancer registry in Maysan city during (1985- 2015), regarding characteristics, mortality rate, and pattern. The data were collected and analyzed using SPSS Software, version 20.0. The data are presented in figures and table. The study found most of registered death was increased with time. Lung cancer was the most common cause of death as 17% followed by urinary bladder cancer as 16%, and breast cancer as 9%. The high prevalence of death was 45% in 2015, followed by 25% in 2005, 18% in 1995 and 12% in 1985. Most of death was significantly higher in males and occurred in the urban areas (p<0.0002). Likewise, the study revealed that most of death reported in the age range of 15-60 years old (p<0.04). This study showed that there was an increase in death incidence by cancer for all types of cancer from 1985 to 2015. It was concluded that cancer mortality rate or trend was increasing with time.

GRAPHICAL ABSTRACT
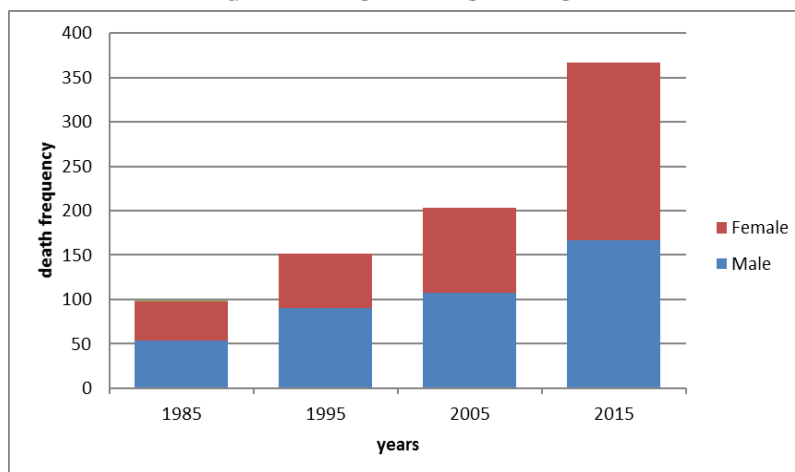
Introduction

The cancer is one of the serious diseases recognized by abnormal cells division which can be invading normal cells and tissues. The people can be affected by cancer at any age, the risk of cancer is increased with the age [1]. Carcinogenesis agents may be physical or chemical. The cancer treatment and curable depending on the cancer type, location and stage. Usually poor prognosis is in the malignant neoplasm, which characterized by the aggressive behavior as invasion or metastasis [2] that is one of the most considerable reasons of mortality and morbidity over all countries, with annual new cases more than fourteen millions. It is 2nd death causes of more than eight millions deaths over all deaths in 2015. In 2020, more than 30% of developing countries reported having pathology services, which is presented in the public health sector [3] and more than 90% of the developed countries reported that management services are available compared to less than 30% of developing countries and the economic cost of cancer is significantly increasing [4]. Generally, in western countries, the dietary pattern, new life style, smoking, and reproductive behaviors are the main cancer risk factors, while in developing countries, the infectious factors is considerable [5]. In developed countries, the smoking rates are decreased, while it increased in most developing countries, like Africa, Asia, and South America [6]. Among males, the smoking prevalence rates are twenty percent in developed countries and the United States, while it is sixty percent in Greece,

Jordan, china, and Indonesia [7-9]. The other risk factors, like fat consumption, high food calories, and low physical activity that present in low developed and economically countries, leading to increase in risk factor for cancer in some populations [10, 11]. The aim of this study was to estimate cancer mortality in Maysan during 1985-2015 and to understand the pattern and demographic characteristics of death due to the cancer in the last 4 decades.

Materials and Methods

A cross-sectional type of study was conducted in Maysan City in Iraq. It was done from the 1st of January to the 30th of June 2022. The study included every death who registered with the history of cancer in the last 4 decades in Maysan City, south of Iraq. The data collection and analysis was done using SPSS-20, and then the data was shown as simple table and figures. The approval and official agreement was obtained from the research Ethical Committees in the Ministry of Health. Permission has been taken from Maysan Directorate of Health.

Results and Discussion

The total of 820 deaths due to cancer was included in the study, which distributed according to the cancer type and year of reporting, most of the registered deaths were increased with time. Death for lung cancer was 17% followed by the urinary bladder cancer 16% and breast cancer was 9%, as presented in Table 1.

Table 1: Distribution of death from cancer according to the types and years of report

Types of cancer (Death)	1985	1995	2005	2015	Total	%
Lung	13	16	35	74	138	16.8
Urinary bladder	24	36	30	41	131	15.9
Breast	3	13	19	39	74	9.0
Leukemia's	13	9	17	19	58	7.0
Liver	3	11	12	31	57	6.9
Brain	2	10	12	28	52	6.3
Lymphoma	6	11	10	25	52	6.3
Stomach	5	7	19	17	48	5.8
Larynx	14	8	13	10	45	5.4
Bone	5	6	6	21	38	4.6
Skin	3	7	8	19	37	4.5
Colorectal	2	9	9	14	34	4.1
Testis	3	5	10	14	32	3.9
Pancreas	2	4	3	15	24	2.9
Total	98	152	203	367	820	100

The current study showed about 45% of death was in 2015, 25% in 2005, 18% in 1995, and 12% in 1985 (Figure 1).

In the present study, most of death was significantly higher in males except in 2015, that it was higher in females with a significant relationship (p<0.002) (Figure 2).

The study was found most of death occur in the urban areas in all years of registry with a statistically significant relationship (p<0.0002) (Figure 3).

The study revealed that most of death reported in the age range of 15-60 years old with a significant relationship (p<0.04) (Figure 4).

The study was found that there are an increasing number of deaths due to cancer for all types of cancer from 1985 to 2015 (Figures 5 and 6).
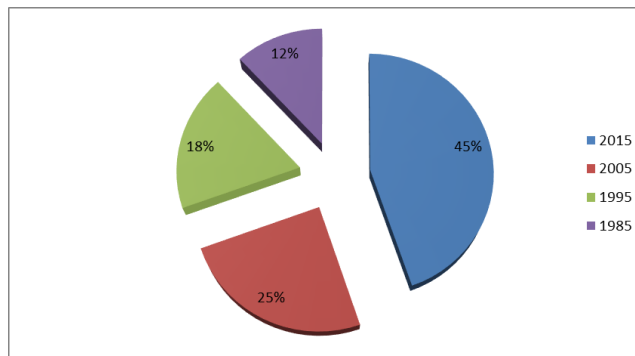

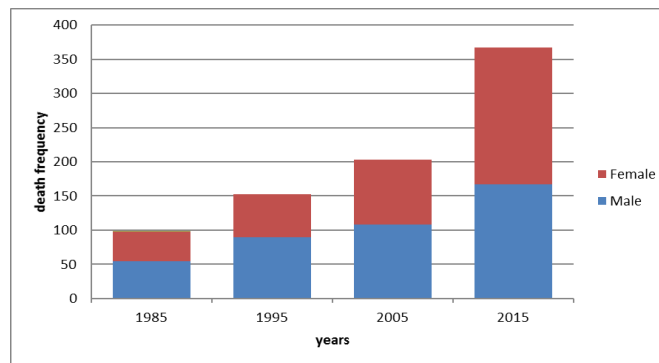**Figure 1:** Death distribution from cancer according to years of report

Figure 2: Distribution of death from cancer according to the gender
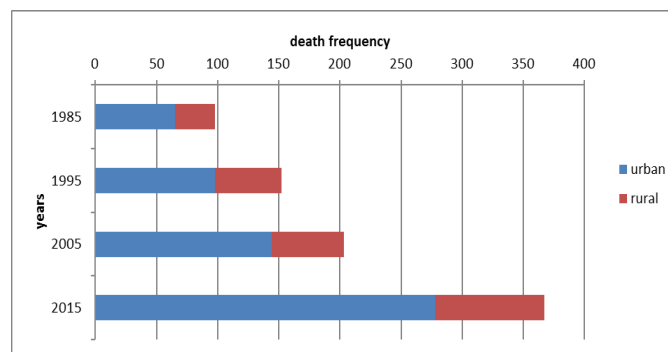

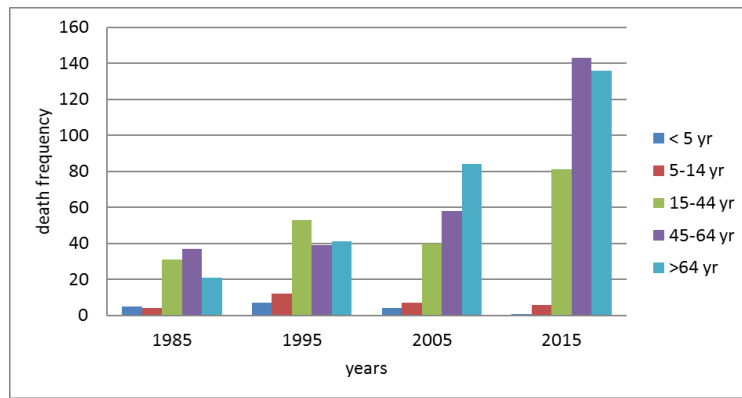**Figure 3:** Distribution of death from cancer according to the residence place

Figure 4: Distribution of death from cancer according to the age group
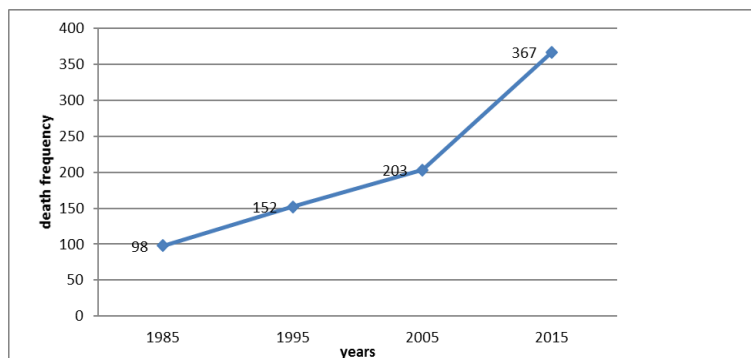

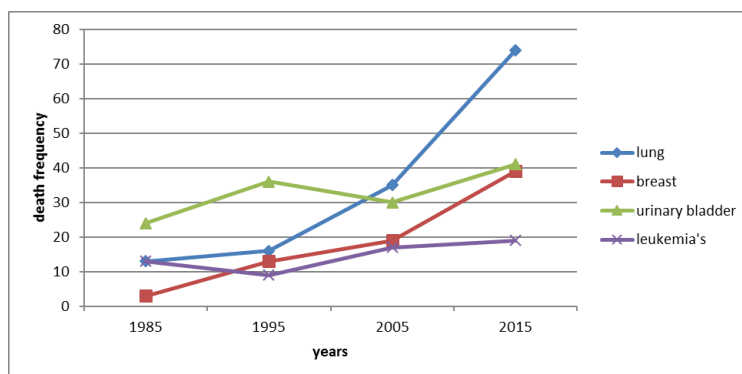**Figure 5:** Trends of cancer death over 1985-2015 in Maysan City

Figure 6: Trends of death according to the cancer types and years

The number of death due to cancers in Maysan, during period of 1985-2015, was elevated and increased more clearly after 2005 (about 45% of death was in 2015, 25% in 2005, 18% in 1995, and 12% in 1985). This may be explained by many reasons, including case registration or detection is improve, the other reason was due to various Iraqi wars in the last four decades which mainly lead to delay in improvement and development of the health system over all Iraqi cities [12-14]. However, there are many studies conducted in different counties of Asia, Latin America, and Africa indicating an increase in the mortality rates of cancer which reflects cancer raising trend [15-18]. In South Korea, the death rates is increasing from 1994 to 2011 as 2.1% per year, while in Japan it is increasing as 1.1% per year from 1997-2011 [19]. In contrast, cancer mortality (especially breast cancer) is declining from 1990s in many European countries, the USA, and Canada [20]. These reductions may be due to the improved detection and diagnosis through the novel and developed tools like mammography and improved management improvement, sometimes these reductions are

unclear which depend on the diagnosis and treatment [20, 21].

The present study revealed that most of death was significantly higher in males than females. This may be explained by that the lung cancer was mostly occur in males due to the risk factor smoking which is more common in males. This result is similar to the results of other studies [22-24].

This study found that most of death occur in the urban are as overall years of registry with a statistically significance relationship (p<0.0002). This may be due to many factors that increased risk to get cancer such as sedentary lifestyle, unhealthy fast food and smoking. There are many results of different studies which are consistent with result of current study [25, 26].

The study revealed that most of death reported in the age range of 15-60 years old group with a significant relationship (p<0.04). This result is similar to the other study finding which improved that risk of cancer is increased with aging and estimated that eighty percent of cancers are detected worldwide in people above 50 years old. Also, about sixty percent of cancer occur above 65 years old was in very high-Human Development Index (HDI) countries, while about forty to thirty percent of cancer was reported in high to low Human Development Index (HDI) countries. Due to the age distribution, this variation is different between the developed and developing countries [27].

Conclusion

It is concluded that incidence of cancers and mortality rate (especially lung, urinary bladder cancer, and breast cancer) was increased in recent years particularly after 2005 in Maysan City. The cancer was high in males over 60 years old and the urban areas.

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Authors' contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

The author declared that they have no conflict of interest.

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