Epidemiology Study for Cancer Incidences among Patients from Baghdad Carrying Different Types of Cancer

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Abstract:

This study was carried out in Al-Yarmook hospital, laboratories department, Baghdad- Iraq; One hundred thirty three Iraqi patients have been recorded during period May 2014 until December 2014. The current study has demonstrated that five different types of the following cancers: Breast cancer, Skin cancer, colorectal cancer, Bladder cancer and endometrial cancer were enrolled in this study. Comparison among each type of cancer was regarded in age, sex and number. The majority results in cancer epidemiology for the present study were fluctuated between the skin and breast cancer, which showed 33.1% and this, represented the prevalence of cancer among all the other types of cancers. In case of other types, the result has showed 16.5 %, 13.5% and 3.7 % for endometrial cancer, Bladder cancer and colorectal cancer, respectively.

Keywords: Types of Cancer, Epidemiology Study.

Introduction:

Cancer epidemiology is the study of the distribution and showing the determination of frequency of the malignant disease in specific populations (1). According to the current data analysis, the introduction was included the following different types of cancer.

Breast cancer:

Breast cancer is the most frequent cancer among women in Iraq and accordance with the latest Iraqi cancer Registry, breast cancer accounts for approximately one-third of the registered female with cancers making it the dominant type of cancer (2). Serum levels of estrogen, prolactin, and progesterone have been found to contribute to the development of this tumor in obese women (3).   Breast cancer survival rates vary greatly in the world with ranging from 80% or over in North America, Sweden and Japan to around in middle-income countries and below 40% in low-income countries(4). Breast cancer in women is increasing due to some changes in the age distribution of population, furthermore, the increasing in family patterns may be enhanced with the real risk factors such as obesity, age at first pregnancy.

Skin cancer:

Skin cancer is one of the most common cancers in the world, especially in the white skin (5), the cancer includes two types of melanoma and non-melanoma(6), incidence and mortality increased over the past decade, the most invasive form of skin cancer is melanoma , it has a high mortality rate, particularly when not detected early, non-melanoma skin cancers are more common but less likely to metastasize with only a small proportion leading to mortality. Non-melanoma skin cancer comprised more than one-third of all cancers and are increased worldwide (5-6). The most important risk factors for skin cancer are genetic and environmental factors(7). Environmental factor types are exposuring to UV solar radiation, decreasing latitude, high intake of alcohol and consumption of high-fat foods, long-term activities in the outdoors(8-11), factors such as skin color, eye color, hair color, aging and some time immunodeficiency (9).

Endometrial cancer:

Endometrial cancer is the common cancer of the females in the western world (12-13), this increase has been attributed to increasing obesity, life expectancy and adjuvant Tamoxifen use for breast cancer (14). Endometrial cancer can be classified into two groups, type-I and type-2 based in histology (15). Type-I endometrial cancer is estrogen-driven is strongly linked to obesity occurs predominantly in pre and perimeno-

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pausal women ,and associated with good prognosis >90% 5 year survival rate (15).

Bladder Cancer

Bladder cancer (BC) is the most common malignancy involving the urinary system and ninth most common malignancy worldwide (16). Bladder cancer is considerably more common in western countries than in developing countries (17), in developing countries, the bladder cancer over 90% are due to transitional cell carcinoma(TCC) , squamous cell carcinoma(SCC), adenocarcinoma and other rare types of bladder cancer were 10% (18).   The epidemiology of bladder cancer considered three time more in men than in women in transmission, but the severity of this cancer has shown that women are more likely to present advanced tumors and have worse prognosis than men at almost every stage of the disease, the survival rate for this cancer in women takes 10 years compared to 5 years in men.   The risk factors that can enhance the bladder cancer are stress, dietary habits and smoking (19-21)

Colorectal cancer:

Colorectal cancer (CRC) can be developed in patients due to complex interactions of external factors, such as environmental and dietary agents or internal factors such as somatic or hereditary(22). Colorectal cancer is the third most common cancer worldwide after lung and breast cancer and fourth most common cause of death with two-third of all CRC, occurring in the more developed countries, CRC affects men and women of all racial ethnic groups(23). Colorectal cancer incidence can increase after the age of 40 years, and become progressively after 50 years. More than 90% of CRC cases were occurred in people aged 50years or older, the incidence is more than 50 times higher in persons aged 60 to 79 years than those younger than 40 years (24).

Methods:

This study conducted in Al-Yarmook hospital, laboratories department from period (May 2014 until December 2014). The data of 133 patients were collected from the records and the registrations were under the pathologist s'reservation.

The data of this study was included the gender, age and the registered types of cancer.

Statistical methods

The data was classified according to the types of cancer to the 5 types mentioned above, and statistically calculated by a nova program. The (p-values) was used as an important indicator in significances.

Ethical approval

In the matter of ethical considerations, this study has written with ethical approval from Al-Yarmook Hospital, Ministry of Iraqi Health, as principle rule serves to facilitate the cooperation between Iraqi researchers with others Iraqi foundation staffs.

Results:

The total of 133 patients were included in this study as shown in Table(1), the incidence rates were   in breast (33.08%) among women, skin (33.08%) , bladder (13.55%) for both sexes , endometrial (16.54%) among women, colorectal (3.75%) for both sexes as shown in (Fig. 1) and Table(1). The pattern of cancer indicated the burden of breast cancer and skin cancer have increased among other types of cancer, and both were occupied the first rank.

According to the data, the common age of breast cancer, was above 40 years with 26 cases(59.09%), followed by 60-70 years age group with 13 cases(29.54%)but the lowest incidence of breast cancer cases were registered among females that age ranged between 30-40 years and gave only 5 cases(11.36%) as shown in (Fig 1A) and Table(1) .

The current study demonstrated that the common age group for the skin was above 40 years, other studies found that mean ages of skin cancer cases were 54 years. (Fig 1B)

There were 5 patients diagnosed with Colorectal cancer (3.75%) for both sexes, the common age was 60-80 for male (40%), 50-60 for female (40%), incidence of CRC cancer case was registered among male in the average age 40-50 years with one case(20%) (Fig 1E).

In case of bladder cancer, the incidence of cancer appeared to have a high incidence in men (66.66%) than women (33.33%), the common group age was above 60 years. (Fig 1D).

In case of endometrial cancer the common age 50-70 years with 14 cases (63.63%), followed by 40-50 years age group with 4 cases (18.18%) (Fig. 1C). The incidence of skin cancer for male(59.09%) and (40.90%) for female(Fig.1B), in case of bladder cancer, the prevalence of cancer for male(66.66%) and (33.33%) for female(Fig. 1D).

Discussion:

Breast cancer is the most common cancer among Iraqi women, the current study indicated that the common age group was above 40 years with 25 (58.81%) followed by 60-70 years age group with 14 cases (31.81%), this result came in coincide with that reference (25) and this comparable to the Iraqi cancer registry and other neighboring countries (26-29), this result was similar to that reference (15).   Breast cancer incidence rates were low for women under age 40, but the incidence rates were high for women by age 49 and double once by age 69 years (15). Hormone-related risk factors for breast cancer were included the early age at menarche, late age at menopause, nulliparity in women over age 40 years and at advanced age in first term pregnancy.

The skin cancer result showed that men more frequently than women, this result similar to registry in Jordan, Kuwait, Qatar Oman (37), the current study indicated that the common age group was above 40 years, other studies found that mean age of skin cancer cases was at 54 years, the risk increased with advancing age in both sexes, this result was similar to (38) which found the outdoor males were more affected than females, the most important defense mechanism of skin is to protect human against UV radiation involving synthesizing the melanin pigment.

The result showed that majority of women with endometrial

cancer among age between 50-70 years and this result similar to (49). Endometrial cancer, like ovarian cancer is non common cancer before age 40, but the incidence increased until age 70. The risk factors associated with endometrial cancer included use of unopposed estrogen therapy, oral contraceptive, obesity, nulliparity and late menopause(49), breast cancer patients are high risk of developing endometrial carcinoma , probably because of shared hormonal effect(46). Low level of physical and high energy intake are increasingly commonly found in European population and seem to increase risk for endometrial cancer independently of body mass index (47-48).

In case of bladder cancer appeared to have higher incidences in men(66.66%) than women(33.33%), the common group age was above 60 years, this result coincide with(48-49), other studies showed that the most cases of bladder cancer found in people who are 50-70 year old (41).

previous studies assumed that the risk of bladder cancer is related to some of chemical substances in smoke, such as 2-nephthylamine and 4-aminobiphenyl, stopping smoking lead to reduces the rate of recurrence for many cancer(42), some other researchers showed the strong evidence link between bladder cancer and exposure to arsenic in drinking water(43), the mechanism by which arsenic rise bladder cancer by indirectly inhibits sulfhydryl containing enzyme this lead to interfering with cellular metabolism like cytotoxicity, genetoixicity and inhibition of enzyme with anti-oxidant function(44).

In case of colorectal cancer, the highest incidence was seen at the age70-80 years for male (60%), 50-60 years for female (40%). Study showed that the differences in CRC appear to have a high incidence in men than women. The incidence of CRC in Iraq is 2,6% compared to 6.13% in developed countries and 17.51% in the industrialized nations(30), the incidence of CRC, most cases are found in people who are 50-80 years old and this comparable to(31-32), other studies showed that rectal cancer appear to be increasing in patients aged <40 years(33-35).

Conclusion:

This study has been demonstrated that the incidence of the breast and skin cancer occupied the first rank among other types of studied cancer , In the other words,This study was demonstrated that breast and skin cancer was the highest risk in the cancer diversity in Iraqi population but according to the current study, the breast cancer varied in only one gander (female) ,but in case of skin cancer the higher risk was in males than females. The other types of cancer their risks were varied ,from the high to the low as followed endometrial cancer, Bladder cancer and the lowest risk among then in cancer diversity was the colorectal cancer.
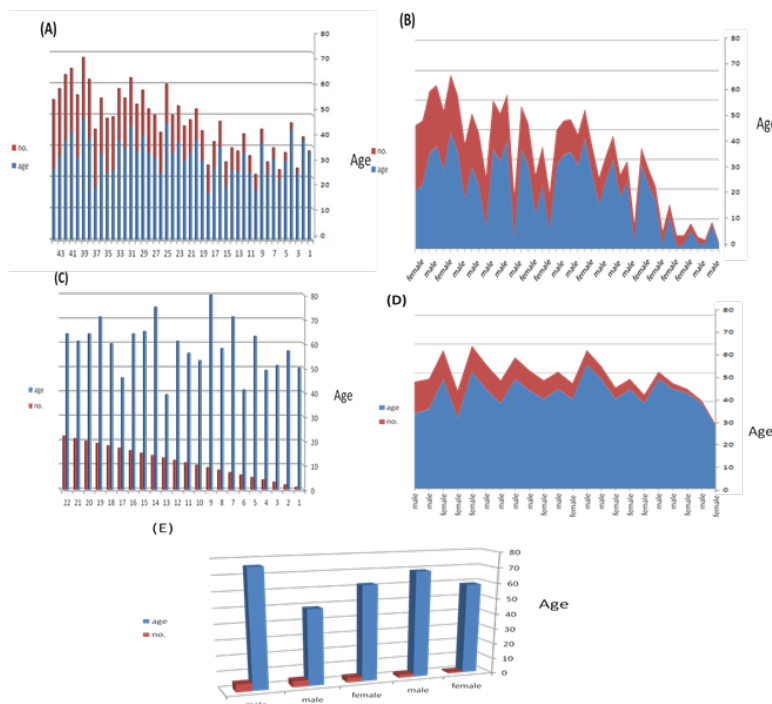
Acknowledgements:

Figure 1: showing the values of patients carrying 5 different types of the following cancer: (A) Breast cancer (B) Skin cancer (C) Endometrial cancer (D) Bladder cancer (E) Colorectal cancer.

Table (1) Showing the frequency of each different types of cancer.

Type of cancer	Total patients		Total Percentage
	Male	Female	
Breast cancer	----	44	33.1%
Endometrail cancer	----	22	16.5%
Skin cancer	26	18	33.1%
Bladder cancer	12	6	13.5%
Colorectal cancer	3	2	3.7%
Total	133		100%
*p value < 0.01			

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دراسة ديمغرافية للحالات السرطانية المختلفة لمرضى من مدينة بغداد

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الخلاصه:

تمت الدراسة في مستشفى اليرموك – قسم المختبرات في بغداد. حيث جمعت مئة وثلاث وثلاثون حالات مرضية لمرضى مصابين بسرطانات مختلفة من السجلات الخاصة بهذا المرض للفترة من مارس 2014 و حتى شهر كانون الاول من عام 2014.

اظهرت الدراسة وجود خمس انواع مختلفة من السرطان مصابوب بها المرضى وهي سرطان الثدي والجلد والقولون والمثانة والرحم .تم استخدام المقارنة والاحصاء بين الانواع المختلفة وضمن النوع الواحد للسرطان على اساس العمر والجنس والاعداد .

اظهرت النتائج تفوق سرطان الثدي و الجلد على بقية السرطانات الاخرى حيث كانت بنسب 33.1 % لكليهما

اما بقية الانواع الاخرى فاظهرت النسب التالية 16.5% لسرطان الرحم و 13.5% لسرطان المثانة و 3.7 % لسرطان القولون.