Research study in cancer by gender, age groups, and kinds of cancer

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ABSTRACT

Background: Cancer is a malignant disease with high incidence in both genders and all age groups. The prevalence of these serious types of cancer which also vary according to age groups and kinds of cancer must be known. Studies are a must to get more attention to these diseases and occasions for prevention of widespread occurrence. **Objective:** This study was done to study the estimated cancer incidence by gender, age groups, and kinds of cancer in patients. **Materials and Methods:** 200 cases of cancer patients that were admitted in oncology wards of the hospital after diagnosis with cancer and getting surgery, chemotherapy and radiology in Iran, Zahedan city region, were studied. The study lasted from 12th April 2014 to 20th March 2015. Data collection was during 12 months by follow-up of patients. Collected data of gender, age groups, and kinds of cancer were assessed with frequency statistics test. **Results:** In particular, females of 35-39 and 50-54 age groups were more vulnerable, and Leukemia was the most frequent type of cancer in the affected population. Cancer research by gender and age groups shows female in 40-44 and male in 35-39 age groups were in high-risk groups. Furthermore, cancer by gender and kinds of cancer indicate that females suffer from leukemia more than males; in contrast, males are affected by lymphoma with higher rate than females. **Conclusions:** Findings in this study revealed different results in gender, variety of age groups, and kinds of cancer. We studied some important factors to assess high-risk groups in every region of world. This finding gives useful information to reduce high susceptibility risk by positive lifestyle choices, not smoking, eating a healthy diet, being physically active, and improving health education.

Key words: *Age groups, Cancer disease, Gender, Kinds of cancer, Susceptible rate*

Nowadays, cancer has attracted worldwide attention. Cancer is spread of abnormal cells, either primary or the next serious effect, i.e., metastatic spread of malignant cells [1]. The burden of cancer in the United States shows estimated 1,685,210 new cases of cancer are diagnosed in the United States per year and it is predicted that 595,690 people will die from the disease in 2016 [2]. Cancer is the third most common cause of death, next to accidents and heart diseases in Iran [3]. There are differences between both genders, age groups and kinds of cancer. The gender difference in susceptibility can give important information for the etiology of cancers and should be examined in all genetic and nongenetic association studies [4]. Whereas National Cancer Registry found that "the median age of cancer patients at diagnosis will increase for all invasive cancers combined; the percentage of patients aged over 70 is expected to increase, for females, from 31% in 2015 to 44% in 2025, and for males, from 40% to 51%" [5]. Liver cancer data indicates that "there will not only be more cancer patients, but they will be older on average; in people living in less developed countries in Asia and Africa the disease can develop at a younger age (typically around the age of 40), compared with those in more developed countries worldwide" [6]. Although about kinds of cancer according to world health ranking, it was investigated that leukemia death was 18th cause of death in Iran, which reflects slightly better condition in this country in this regard [7]. Statistics by country extrapolated found that leukemia incidence was 7,643 from 67,503,2052 in Iranian population [8]. Projected numbers of incident cases of leukemia, however, from 2015 to 2040, in females is 12% 2015 to 88% in 2040, and in males, 22% in 2015 to 117% in 2040 [5].

In this study, we aim to look into the cancer cases by gender, age groups, and kinds of cancer in cancer patients.

MATERIALS AND METHODS

This investigation was conducted in 200 patients that were admitted into hospital in oncology wards of hospital after diagnosis with cancer in Zahedan city region, Iran. Cases of cancer getting various treatments such as surgery with removal of the tumor and surrounding tissue during an operation, chemotherapy or use of drugs to destroy cancer cells, which works by keeping the cancer cells from growing and dividing to make more cells, and radiotherapy by high-energy X-rays to destroy cancer cells and slow tumor growth, without harming

nearby healthy tissue, were studied [9]. The study spanned from 12th April 2014 to 20th March 2015. Data collection was during 12 months by follow-up of patients. Collected data of gender, age groups, and kinds of cancer were considered with frequency statistics test that assessed both genders, age groups with ranking according to the WHO world standard age-structure; in addition, age groups were made according to the new WHO world standard population because this has become particularly relevant given the rapid and continued declines in age-specific mortality rates among the oldest old [10]. 11 kinds of cancer were encountered including leukemia, lymphoma, stomach carcinoma (CA), lung and bronchus CA, breast cancer, squamous cell CA, esophagus CA and ovarian cancer patients.

The collected data were coded for entry in the computer; data analysis was done by Microsoft Statistical Package for the Social Science (SPSS-PC) Software Version 21. All statistical descriptions were done to determine 95% confidence interval level.

RESULTS

Sample population included 59% female and 41% males in all cancer patients. Mean age was 44.74 years and standard deviation was 16.95 with 95% interval confidence. Study evaluated high risk of age groups in cancer patients, that indicated, 35-39 and 50-54 age groups had been 12% of susceptible rate although 40-44 and 45-49 age groups got 9.5% susceptible rate; mentioned age groups were in high-risk against other groups, so these age groups perhaps need more attention to restrain higher rate (Table 1).

Described here are 11 kinds of cancer. Evidence indicated leukemia with 21.5% was the most common in cancer patient population, then lymphoma with 15.5% was next most frequent in the patients (Table 2).

Research cancer by gender and age groups shows female in 40-44 and male in 35-39 age groups were in high risk. Furthermore research by gender and kinds of cancer indicate that females suffered from leukemia more than males; in contrast, males got more lymphoma cases than females.

DISCUSSION

The study estimated 200 cases from vast majority of cancer population, therefore, this sample can be extrapolated to major and serious numbers of cancer in Zahedan city region of Iran. First of all, this research indicates females were overall more susceptible than males. Actually, there was markedly difference between male-to-female mortality rates while cancer survival discrepancies were much less obvious; this suggests that sex-related cancer discrepancies are more strongly related to etiology than prognosis [11]. Evidence shows 35-54 years old were most susceptible in cancer patients. The American Cancer Society Inc., reported, "cancer most commonly develops in older people; 78% of all cancer diagnoses are in people 55-year-old or older" [12]. Cancer occurred in adults more and <50 years [13]. Furthermore,

Table 1: Cancer by age groups

Group	Variable (years old)	Frequency (%)
1	15-19	11 (5.5)
2	20-24	16 (8)
3	25-29	18 (9)
4	30-34	15 (7.5)
5	35-39	24 (12)
6	40-44	19 (9.5)
7	45-49	19 (9.5)
8	50-54	24 (12)
9	55-59	14 (7)
10	60-64	13 (6.5)
11	65-69	4 (2)
12	70-74	8 (4)
13	75-79	11 (5.5)
14	80-84	4 (2)

95% confidence interval

Table 2: Cancer by most common kinds of cancer

Number	Variable (kinds of cancer)	Frequency (%)
1	Leukemia	43 (21.5)
2	Lymphoma	31 (15.5)
3	Stomach	24 (12)
4	Lung and brunch	21 (10.5)
5	Colon and rectum	20 (10)
6	Breast	14 (7)
7	Squamous cell carcinoma	10 (5)
8	Mole	10 (5)
9	Esophagus	10 (5)
10	Ovarian	9 (4.5)
11	Tumor	8 (4)
	Total	200 (100)

95% confidence interval

research indicates leukemia was highly common in cancer patients. Cancer fact and figure estimated 60,140 new cases of leukemia are expected in 2016 [14]. Leukemia incidence was reported as 13%, which is a very high rate in the most recent years [13]. Trends in Irish cancer incidence from 1994 to 2002 with predictions to 2020 estimated incidence rate of leukemia in females and males were 13% and 87%, respectively, from 1998 to 2002, with greater projections to 2020 (±95% prediction intervals) [15].

Research cancer by gender and age groups declared female in 40-44 and male in 35-39 age groups got more susceptible rate. SEER explorer indicated white include Hispanic age 20-49 female 5.1 and male 4.6 were cases per 100000 in addition Asian/Pacific Islander include Hispanic age 20-49 male 4.5 female 4.4 were cases per 1,00,000 [16]. Furthermore, study by gender and kinds of cancer indicate females got leukemia more than male in contrast, male got lymphoma more than female. Leukemia, lymphoma, and myeloma are expected to cause the deaths of an estimated 58,320 people in the US in 2016 [17].

Difference in gender, age groups, and kinds of cancer could be affected by main epidemiological risk factors of cancer in Iran that induce cancer including smoking, diet, genetic, life style, and infection. A total of 1.6 million smoking-attributable deaths were from cardiovascular diseases (10% of all global cardiovascular deaths) and 1.5 million were from cancers (20% of all global cancer deaths) [18]. Other study recommendations include maintaining a healthy weight, eating fruits and vegetables, whole grains, and limiting consumption of refined carbohydrates and processed and red meats [19]. In addition, genetic factors mainly refer to the susceptible genes that cause epigenetic intermittences in oncogenes, tumor suppress genes, cell cycle regulators, DNA repair genes and signaling molecules that genetic is basic of cancer [20]. Moreover, lower educational level was also responsible in that people also had poor awareness and felt that the National Health Service should not prescribe exercise and lifestyle change; targeting cancer group would need to take more information and education about health [21]. In particular, the role of diet and infection are not certain; the relationship of inflammation and perhaps infection, likely involves inciting events in genetically susceptible people, influenced by their environment, to contribute to the development of patient-controlled analgesia [22].

CONCLUSION

Cancer is serious disease by the visible growth of mortality rate in recent years; it is likely that many factors were unrecognized to prevention cancer. They should be looked for according to ages and kinds of cancer because of high risk of susceptibility. In fact, people can reduce their risk of getting cancer by making positive lifestyle choices, not smoking, eating a healthy diet, keeping themselves physically active and improving health education about cancer disease that in some way could decrease susceptibility rates of cancer.

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