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Research Article

Prevalence of types of cancer in Najaf Governorate and comparison of leukemia with other types

Dhafer Rahman Abed Al-janabi[1*], Yousra Ali Shallani[2], Lewaa AbdulAdhem Dakheel Albakaa[3], Ahmed Abduljabbar Jaloob Aljanaby[4]

[1]The Islamic University of Najaf, College of Medical Technology, Department of Medical Laboratory Technology, Iraq
[2]Al Najaf teaching hospital., Labratory department, Hematopathology unit
[3]Al Qadisiyah general hospital in Al-Najaf, Iraq
[4]Department of Biology, Faculty of Science, University of Kufa, Iraq
*Corresponding author Email: dhafer.rahmaan[@]iunajaf.edu.iq

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Abstract:
Cancer is a disease in which some body cells grow uncontrollably and spread to other parts of the body, and its spread rate increases significantly in most countries, including Iraq. This study was conducted at the Islamic University/College of Medical Technology, where data was collected for 108 patients. Cancer from the Teaching Oncology Center in Najaf for the period from February 2023 to March 2024. The results revealed that there were 67 (62.04 %) female patients and 41 (45.37 %) male patients, and the age group (41-60) was the most prevalent, 45 (41.67%) patients. As for the type of cancer, breast cancer constituted the largest percentage, with 29 (26.8%) patients, followed by lung cancer, with 8 (7.4 %) patients. Prevalence of leukemia represented was (3.7%,) and it was equal among males and females, and most of them were under 20 years old (75%). One of the ways to reduce the spread of this deadly disease is to conduct a regular examination to detect any abnormal growth in the body, as early detection may accelerate recovery to a very large extent.

Keywords: Cancer, Prevalence, Leukemia, Al Najaf Province.

Introduction

Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body [1].These contrast with benign tumors, which do not spread. Possible signs and symptoms include a lump, abnormal bleeding, prolonged cough, unexplained weight loss, and a change in bowel movements. While these symptoms may indicate cancer, they can also have other causes [2-3]. Over 100 types of cancers affect humans [4]. Cancer is regarded as the major cause of death worldwide [5-7]. The incidence of cancer is increasing, yearly more than fifteen million new cases were diagnosed and nearly half of them died by cancer [8]. In Iraq according to the Ministry of Health statistics in 2016 cancer is always considered a significant health problem and the second leading cause of death [9]. Cancer cells differ from

normal cells in many ways. For instance, cancer cells: grow in the absence of signals telling them to grow. Normal cells only grow when they receive such signals .ignore signals that normally tell cells to stop dividing or to die (a process known as programmed cell death, or apoptosis) invade into nearby areas and spread to other areas of the body [10-11].

Materials and Methods

Ethical Consideration

It was approved by the Institutional Ethics Committees of the Islamic University of Najaf College of Medical Technology Medical Laboratory Techniques Department and the Scientific Committee for Research in the Health Department of Najaf

Patients

This study was conducted in Al-Najaf Governorate, Iraq. Data was collected for 108 cancer patients from the Oncology Educational Center in Najaf, Iraq for the period from February 2023 to March 2024, total Data of 108 patients (male and female) with cancer, aged from 10 to 87 years, living in urban and rural areas.

Statistical analysis

Data analysis (calculating the mean, standard deviation, and percentages) was performed using the statistical package SPSS version 26, the P value is less than 0.05 [12-13].

Results

In this study, data were collected from the Oncology Teaching Center in Najaf Governorate from 108 patients with cancer, and the results showed that there were 24 types, as Figure 1, and that the most common type was breast cancer, 29 patient (26.85%) followed by lung cancer 8 (7 41%). The lowest percentage is due to Anal cancer, Testicular cancer,Oropharyngeal cancer, Adrenal cancer1 (0.93%), The patients' residence varied between the countryside and the city. The results showed that 49 patients (45.37%) were residents of urban areas and 59 patients (54.63%) were residents of rural areas. Figure 2. The sex of the patients varied between males and females, the results showed that 67 patients (62.04%) were females and 41 patients (37.96%) were males. Figure 3. The patients were of different ages, from 11 years to 87 years. They were divided into four age groups. The results showed that 9 patients (7.4%) were less than 20 years old, 19 patients (17.59%) were 20-41 years old, 45 patients (41.67%) were 41-60 years old, and 36 (33.33%) patients were older than 60 years old. Figure 4. And from figure 5, we note that the prevalence of leukemia is 3.7% of the total number of cancer types.

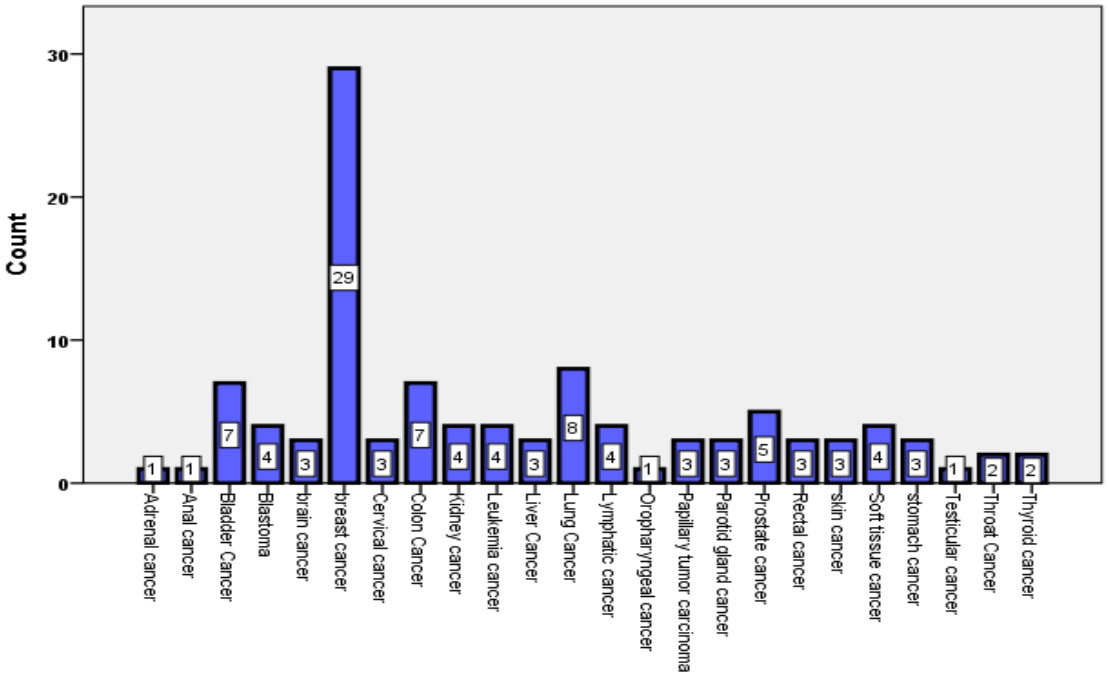

Figure 1. Numbers of patients infected with cancer according to type.

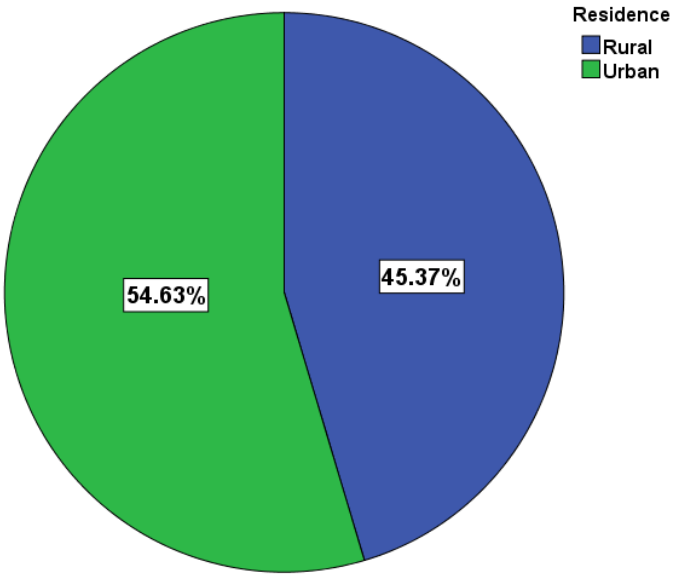

Figure 2. Numbers and percentages of patients infected with cancer according to residence.

Table 1. Numbers and percentages of patients infected with cancer according to residence

Type of cancer	Residence					
	Rural			Urban		
	Count	Row N %	Total N %	Count	Row N %	Total N %
Adrenal cancer	0	0.00%	0.00%	1	100.00%	0.90%
Anal cancer	0	0.00%	0.00%	1	100.00%	0.90%
Bladder Cancer	3	42.90%	2.80%	4	57.10%	3.70%
Blastoma	3	75.00%	2.80%	1	25.00%	0.90%
brain cancer	1	33.30%	0.90%	2	66.70%	1.90%
breast cancer	12	41.40%	11.10%	17	58.60%	15.70%
Cervical cancer	0	0.00%	0.00%	3	100.00%	2.80%
Colon Cancer	5	71.40%	4.60%	2	28.60%	1.90%
Kidney cancer	3	75.00%	2.80%	1	25.00%	0.90%
Leukemia cancer	0	0.00%	0.00%	4	100.00%	3.70%
Liver Cancer	0	0.00%	0.00%	3	100.00%	2.80%
Lung Cancer	4	50.00%	3.70%	4	50.00%	3.70%
Lymphatic cancer	1	25.00%	0.90%	3	75.00%	2.80%
Oropharyngeal cancer	0	0.00%	0.00%	1	100.00%	0.90%
Papillary tumor carcinoma	3	100.00%	2.80%	0	0.00%	0.00%
Parotid gland cancer	3	100.00%	2.80%	0	0.00%	0.00%
Prostate cancer	1	20.00%	0.90%	4	80.00%	3.70%
Rectal cancer	0	0.00%	0.00%	3	100.00%	2.80%
skin cancer	0	0.00%	0.00%	3	100.00%	2.80%
Soft tissue cancer	4	100.00%	3.70%	0	0.00%	0.00%
stomach cancer	3	100.00%	2.80%	0	0.00%	0.00%
Testicular cancer	1	100.00%	0.90%	0	0.00%	0.00%
Throat Cancer	2	100.00%	1.90%	0	0.00%	0.00%
Thyroid cancer	0	0.00%	0.00%	2	100.00%	1.90%
Total	49		45.37%	59		54.63%

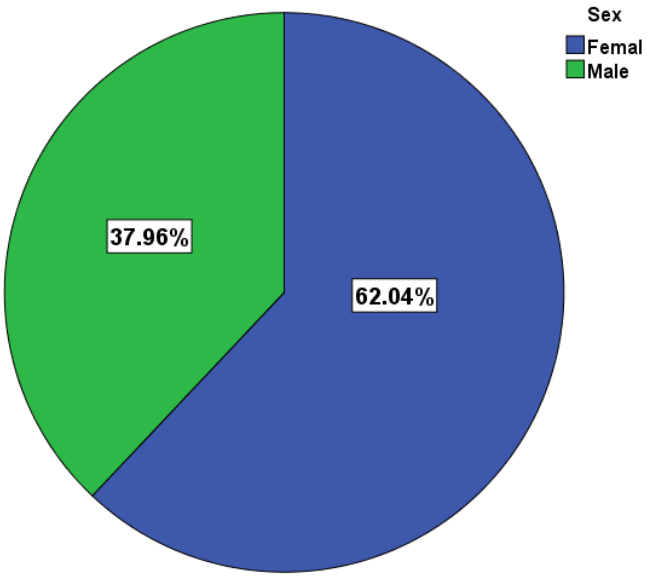

Figure 3. Numbers and percentages of patients infected with cancer according to sex

Table 2. Numbers and percentages of patients infected with cancer according to sex

Type of cancer	Sex					
	Femal			Male		
	Count	Row N %	Total N %	Count	Row N %	Total N %
Adrenal cancer	0	0.00%	0.00%	1	100.00%	0.90%
Anal cancer	1	100.00%	0.90%	0	0.00%	0.00%
Bladder Cancer	3	42.90%	2.80%	4	57.10%	3.70%
Blastoma	1	25.00%	0.90%	3	75.00%	2.80%
brain cancer	2	66.70%	1.90%	1	33.30%	0.90%
breast cancer	29	100.00%	26.90%	0	0.00%	0.00%
Cervical cancer	3	100.00%	2.80%	0	0.00%	0.00%
Colon Cancer	4	57.10%	3.70%	3	42.90%	2.80%
Kidney cancer	2	50.00%	1.90%	2	50.00%	1.90%
Leukemia cancer	2	50.00%	1.90%	2	50.00%	1.90%
Liver Cancer	2	66.70%	1.90%	1	33.30%	0.90%
Lung Cancer	1	12.50%	0.90%	7	87.50%	6.50%
Lymphatic cancer	2	50.00%	1.90%	2	50.00%	1.90%
Oropharyngeal cancer	0	0.00%	0.00%	1	100.00%	0.90%
Papillary tumor carcinoma	3	100.00%	2.80%	0	0.00%	0.00%
Parotid gland cancer	2	66.70%	1.90%	1	33.30%	0.90%

Prostate cancer	0	0.00%	0.00%	5	100.00%	4.60%
Rectal cancer	2	66.70%	1.90%	1	33.30%	0.90%
skin cancer	1	33.30%	0.90%	2	66.70%	1.90%
Soft tissue cancer	2	50.00%	1.90%	2	50.00%	1.90%
stomach cancer	2	66.70%	1.90%	1	33.30%	0.90%
Testicular cancer	0	0.00%	0.00%	1	100.00%	0.90%
Throat Cancer	1	50.00%	0.90%	1	50.00%	0.90%
Thyroid cancer	2	100.00%	1.90%	0	0.00%	0.00%
Totale	67		62.04%	41		37.96%

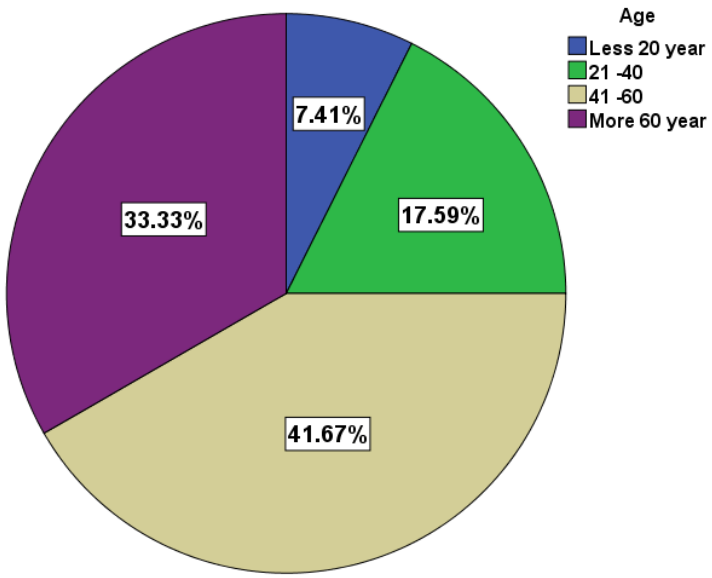

Figure 4. Numbers and percentages of patients infected with cancer according to age.

Table 3. Numbers and percentages of patients infected with cancer according to age

Type of cancer	Age							
	Less 20 year		21 -40		41 -60		More 60 year	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Adrenal cancer	0	0.00%	1	100.00%	0	0.00%	0	0.00%
Anal cancer	0	0.00%	0	0.00%	1	100.00%	0	0.00%
Bladder Cancer	0	0.00%	1	14.30%	3	42.90%	3	42.90%
Blastoma	1	25.00%	0	0.00%	2	50.00%	1	25.00%
brain cancer	0	0.00%	1	33.30%	1	33.30%	1	33.30%
breast cancer	0	0.00%	1	3.40%	15	51.70%	13	44.80%
Cervical cancer	0	0.00%	1	33.30%	1	33.30%	1	33.30%
Colon Cancer	0	0.00%	2	28.60%	3	42.90%	2	28.60%
Kidney cancer	0	0.00%	1	25.00%	2	50.00%	1	25.00%
Leukemia cancer	3	75.00%	0	0.00%	1	25.00%	0	0.00%
Liver Cancer	1	33.30%	1	33.30%	1	33.30%	0	0.00%
Lung Cancer	0	0.00%	1	12.50%	5	62.50%	2	25.00%
Lymphatic cancer	1	25.00%	2	50.00%	0	0.00%	1	25.00%
Oropharyngeal cancer	0	0.00%	0	0.00%	1	100.00%	0	0.00%
Papillary tumor carcinoma	0	0.00%	0	0.00%	1	33.30%	2	66.70%
Parotid gland cancer	1	33.30%	1	33.30%	1	33.30%	0	0.00%
Prostate cancer	0	0.00%	0	0.00%	2	40.00%	3	60.00%
Rectal cancer	0	0.00%	1	33.30%	1	33.30%	1	33.30%
skin cancer	0	0.00%	1	33.30%	1	33.30%	1	33.30%
Soft tissue cancer	1	25.00%	1	25.00%	1	25.00%	1	25.00%
stomach cancer	0	0.00%	1	33.30%	1	33.30%	1	33.30%
Testicular cancer	0	0.00%	0	0.00%	1	100.00%	0	0.00%
Throat Cancer	0	0.00%	1	50.00%	0	0.00%	1	50.00%
Thyroid cancer	0	0.00%	1	50.00%	0	0.00%	1	50.00%
Total	8	7.41%	19	17.59%	45	41.67%	36	33.33%

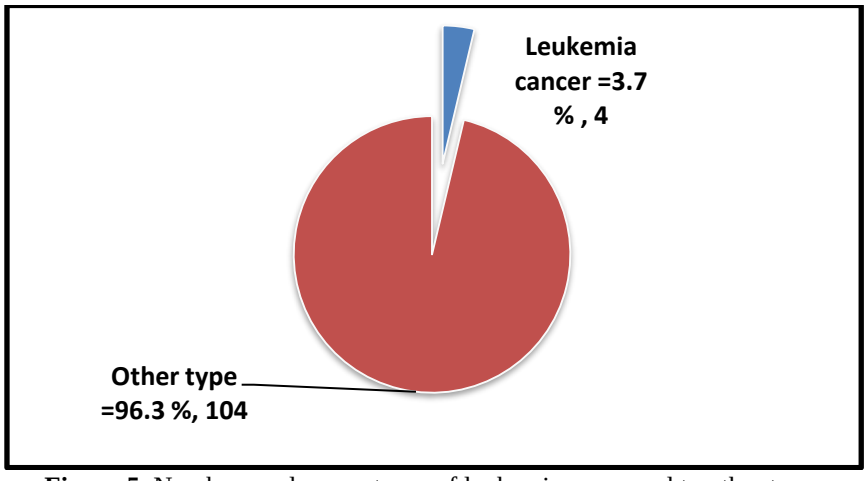

Figure 5. Numbers and percentages of leukemia compared to other types

Discussion

This study was conducted for the purpose of knowing the types of cancer prevalent in Iraq in general, especially in Najaf Governorate. The results showed the presence of 24 types during a period of 12 months. This is a dangerous indicator, and the reason may

be due to the environment in which Iraq lives due to the remnants of the wars that Iraq has witnessed over the past years [14-15], or because of the spread of Corona, which has spread widely in Iraq, which weakens immunity and thus makes the person vulnerable to diseases [16]. The female more affected by cancer than male mainly by breast cancer this result is identical to study done in USA in which they show that breast cancer is the most common cancer in American women, But every woman should know about the risks for breast cancer and what they can do to help lower their risk [17]. There are also increase of frequency of prostate cancer in male .this identical to study done by Husain HY, Al-Alwacahi SF that shows Prostate cancer is the second most frequent malignancy (after lung cancer) in men worldwide, counting 1,276,106 new cases and causing 358,989 deaths (3.8% of all deaths caused by cancer in men) in 2018 [18].The incidence and mortality of prostate cancer worldwide correlate with increasing age, they shows that diet and physical activity play an important role in prostate cancer development between age and sex [19] ,this study is identical to study done by Moynihan C. that show female is more affect than male . Also, there is no significant association between the site of case affected by cancer and the type of cancer, there is increased incidence of cancer in rural area than in urban area this study identical to study done by Meilleur A *et.al* 2015 in which, there is increase chance of having cancer in rural area, and the urban decline in incidence rate was greater than in rural populations. Rural cancer disparities included higher rates of lung and bronchus, cervical, and colorectal cancers across most population groups. Furthermore, HPV-associated cancer incidence rates increased in rural areas and decrease of preventive screening modalities for (e.g., colorectal and cervical cancers) were higher in rural compared with urban [20]. Between 1990 and 2017, Leukemias are a group of life-threatening malignant disorders of the blood and bone marrow [21]. The incidence of leukemia varies by pathological types and among different populations and rates increased significantly in most countries, suggesting that leukemia may become a major global public health concern [21]. We have not noticed the presence of leukemia in advanced ages over 60 years. This may be due to the fact that it spreads between all human formative stages and due to a hereditary factor or a functional or structural defect in the bone marrow [22]. Unlike other types, such as lung, liver, stomach, and other cancers, they may occur more frequently in the elderly because It is the result of the accumulation of certain effects on these organs, such as smoking. Also, the reason why leukemia is limited to certain ages is due to deaths caused by the disease in a short period after infection, for which there is no effective treatment yet. As for some types of cancer, it is possible to cure them by chemical or biological methods, and sometimes by eradication [23-24]. In terms of gender, it affects both genders, males and females, in equal proportions, as our results showed, which were consistent with many results. As for some other types of cancer, we find them limited to a specific gender, or in a majority with a large difference from others, such as breast and prostate cancer. In order to limit or reduce the spread of cancer, personal habits must be improved, such as exercising, not necessarily going to gyms. Walking regularly is an important factor in improving and revitalizing the body, reducing fatty diets, especially fast food, and eating more vegetables and fruits. Quitting all types of smoking, as well as not drinking alcohol, and in addition to conducting a regular examination to detect any abnormal growth in the body, early detection may accelerate recovery to a very large extent.

Conclusions

In Iraq - Najaf Governorate - the finding of the current study has been

1. Female are more susceptible to cancer than males.
2. The age group (40-61 years) is the most common.
3. Type breast cancer is more common among patients with cancer

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