Prevalence of Oncological and Hematological Disease among Displace People

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Abstract: **Background**: Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. These contrast with benign tumors, which do not spread. Process of invade adjoining parts of the body and spread to other organs is referred to as metastasizing. Metastases are a major cause of death from cancer. Cancer is a second leading cause of death worldwide. **Objectives**: to determine the prevalence of the oncological and hematological diseases among displaced people in sulaymaniyah province. **Methods**: A retrospective study was performed on patients with oncological and hematological disease patients which are register in the Hiwa Cancer hospital and chronic disease center in sulaymaniyah province during the period between 1st January 2014 to 10th October 2017.Atotal of 722 patients, 382 females and 340 males constituted the study group. **Results**: there were (52.91%) females patients and (47.09%) males patients. the prevalence of oncological and hematological disease among displaced people was (2155) per million populations. The prevalence of the various types of cancers disease in this study was; breast (18.69 %), leukemia (11.21%), gastrointestinal (10.24%), urinary tract (7.34%), lymphoma (5.81%), lung (5.40%), gynecological (5.12%), brain (3.73%), nasopharyngeal (3.46%), sarcoma (2.90%), skin (1.66%), thyroid (1.52%) and multiple myeloma (1.11%). While all the benign hematological disorder account for (21.75%). **Conclusions**: The prevalence of oncological and hematological disease among displaced people in sulaymaniyah province is high. most of displaced people lives outside the camps. Breast cancer and leukemia constituted the top of these diseases. There are a large number of displaced patients from Anbar and Diayala governorate.

Keywords: cancer, hematological disorder and displaced patients in sulaymaniyah.

INTRODUCTION

Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. A neoplasm or tumor is a group of cells that have undergone unregulated growth and will often form a mass or lump. All tumor cells show the six hallmarks of cancer. These characteristics are required to produce a malignant tumor. They include: cell growth and division absent the proper signals, continuous growth and division even given contrary signals, avoidance of programmed cell death, limitless number of cell divisions, promoting blood vessel construction and Invasion of tissue and formation of metastases (8). Clinical local symptoms may occur due to the mass of the tumor or its ulceration. Although localized pain may occur in advanced cancer, the initial swelling is usually painless. While the general symptoms occur due to the effects that are not related to direct or metastatic spread. These may include: unintentional weight loss, fever, excessive fatigue and changes to the skin. Some cancers may cause specific groups of systemic symptoms, termed paraneoplastic syndrome. Cancer can spread from its original site by local spread, lymphatic spread to regional lymph nodes or by hematogenous spread via the blood to distant sites, known as metastasis.

Cancers are classified by the type of cell that the tumor cells resemble, presumed to be the origin of the tumor. These types include;

Carcinoma: cancers derived from epithelial cells.
Sarcoma: cancers arising from connective tissue (bone, cartilage, fat).
Lymphoma and leukemia: these arise from hematopoietic cells that leave the marrow and tend to mature in the lymph nodes and blood, respectively.

Causes and Risk Factors
The majority of cancers, some 90–95% of cases, are due to genetic mutations from environmental and lifestyle factors. The remaining 5–10% are due to inherited genetics. Environmental factors such as lifestyle, tobacco use, alcohol use, unhealthy diet, physical inactivity and radiation (both ionizing and non-ionizing) are major cancer risk factors worldwide (8). Some chronic infections are risk factors for cancer and approximately 15% of cancers diagnosed were attributed to carcinogenic infections, including Helicobacter pylori, Human papillomavirus (HPV), Hepatitis B virus, Hepatitis C virus, and Epstein-Barr virus (2).

Diagnosis and Early Detection
Most cancers are initially recognized either because of the appearance of signs or symptoms or through screening. People with suspected cancer are investigated with medical tests. These include

blood tests, X-rays, (contrast) CT scans and endoscopy. The tissue diagnosis from the biopsy indicates the type of cell that is proliferating, its histological grade, genetic abnormalities, together this information is useful to evaluate the prognosis and to choose the best treatment. Cytogenetics and immunohistochemistry are other types of tissue tests.

There are 2 components of early detection:1. Early diagnosis; when identified early, cancer is more likely to respond to effective treatment and can result in a greater probability of surviving, less morbidity, and less expensive treatment.2. Screening: Screening aims to identify individuals with abnormalities suggestive of a specific cancer or pre-cancer who have not developed any symptoms and refer them promptly for diagnosis and treatment (7).

Cancer Prevention
Cancer prevention is defined as active measures to decrease cancer risk. The vast majority of cancer cases are due to environmental risk factors. Many of these factors are controllable lifestyle choices.

Cancer deaths could be prevented by avoiding risk factors including: tobacco, excess weight/obesity, poor diet, physical inactivity, alcohol, sexually transmitted infections and air pollution (8).

Management of Cancer and Oncology
Many treatment options for cancer exist. The primary ones include surgery, chemotherapy, radiation therapy, hormonal therapy, targeted therapy and palliative care. Which treatments are used depends on the type, location and grade of the cancer as well as the patient's health.

The primary goal is generally to cure cancer and improving the patient's quality of life. Palliative care is treatment to relieve rather than cure symptoms caused by cancer and improve the quality of life of patients and their families. It is an urgent humanitarian need for people worldwide with cancer and particularly in advanced stages of cancer. Relief from physical, psychosocial, and spiritual problems can be achieved in over 90% of advanced cancer patients through palliative care (7).

Prognosis
Survival rates vary by cancer type, the stage at which it is diagnosed, patient's age and overall health, ranging from majority survival to complete mortality five years after diagnosis. Once a cancer

has metastasized, prognosis normally becomes much worse (8).

Epidemiology
Globally about 1 in 6 deaths is due to cancer. Around one third of deaths from cancer are due to the 5 leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use. More than 90% of high-income countries reported treatment services are available compared to less than 30% of low-income countries. Estimates are that in 2018, 18.1 million new cases of cancer and 9.6 million deaths occur globally (7). About 20% of males and 17% of females will get cancer at some point in time while 13% of males and 9% of females will die from it. The most common causes of death in 2018 are lung cancer, colorectal cancer, stomach cancer, liver cancer, and breast cancer (7).

Hematological Diseases
Blood disorders can affect any of the blood components; red blood cells, white blood cells, platelets and plasma (13).

Blood Disorders that affect Red Blood Cells Include
People with anemia have a low number of red blood cells. Mild anemia often causes no symptoms. Anemia type includes:

Iron-deficiency Anemia: Low iron intake and loss of blood due to menstruation or blood loss from the GI tract because of ulcers or caner are the most common causes of iron-deficiency anemia.

Anemia of Chronic Disease: People with chronic kidney disease or other chronic diseases tend to develop anemia.

Pernicious Anemia (B12 deficiency): A condition that prevents the body from absorbing enough B12 in the diet. This can be caused by a weakened stomach lining or an autoimmune condition.

Aplastic Anemia: In people with aplastic anemia, the bone marrow does not produce enough blood cells. This can be caused by a host of conditions, including hepatitis, Epstein-Barr, or HIV, side effect of a drug, chemotherapy medications, and pregnancy.

Autoimmune Hemolytic Anemia: In people with this condition, an overactive immune system destroys the body's own red blood cells, causing anemia.

Thalassemia: This is a genetic form of anemia that mostly affects people of Mediterranean heritage. Most people have no symptoms and require no treatment. Others may need regular blood transfusions.

Sickle Cell Anemia: A genetic condition that affects mostly people whose families have come from Africa, South America, India, Saudi Arabia, and Mediterranean countries. Here the red blood cells are sticky and stiff. They can block blood flow result in severe pain and organ damage.

Polycythemia Vera: The body produces too many blood cells, from an unknown cause. The excess red blood cells usually create no problems but may cause blood clots in some people.

Blood Disorders that Affect White Blood Cells Include
Lymphoma: A form of blood cancer that develops in the lymph system, the white blood cell becomes malignant, multiplying and spreading abnormally. Hodgkin's lymphoma and non-Hodgkin's lymphoma are the two major groups. Treatment with chemotherapy and/or radiation can often extend life with lymphoma, and sometimes cure.

Leukemia: A form of blood cancer in which a white blood cell becomes malignant and multiplies inside bone marrow. Leukemia may be acute (rapid and severe) or chronic (slowly progressing). Chemotherapy and/or bone marrow transplant can be used to treat leukemia, and may be cure.

Multiple Myeloma: A blood cancer in which a plasma cell becomes malignant. The plasma cells multiply and release damaging substances that cause organ damage. Multiple myeloma has no cure (2).

Myelodysplastic Syndrome: A family of blood cancers that affect the bone marrow. It progresses very slowly, but transform into a severe leukemia. Treatments include blood transfusions and chemotherapy.

Disorders that Affect the Platelets Include
Thrombocytopenia: A low number of platelets in the blood; numerous conditions cause it, but most do not result in abnormal bleeding.

Idiopathic Thrombocytopenic Purpura: A condition causing a persistently low number of platelets in the blood, due to an unknown cause; usually, there are no symptoms, yet abnormal bruising, small red spots on the skin (petechiae).

Heparin -Induced Thrombocytopenia: A low platelet count caused by a reaction against heparin, a blood thinner is given to prevent blood clots.

Essential Thrombocytosis: The body produces too many platelets, due to an unknown cause; the platelets do not work properly, resulting in excessive clotting, bleeding, or both.

Blood Disorders that Affect Blood Plasma Include:
Hemophilia: A genetic deficiency of certain proteins that help blood to clot; there are multiple forms of hemophilia, ranging in severity from mild to life-threatening.

Von Willebrand Disease: von Willebrand factor is a protein in blood that helps blood to clot. Here the body either produces too little of the protein, or produces a protein that doesn't work well. The condition is inherited, but most people have no symptoms and don't know they have it. Some people will have excessive bleeding after an injury or during surgery.

Hypercoagulable State: A tendency for the blood to clot too easily; most affected people have only a mild excess tendency to clot, and may never be diagnosed.

Deep Venous Thrombosis: A blood clot in a deep vein, usually in the leg; it can dislodge and travel through the heart to the lungs, causing a pulmonary embolism.

Disseminated Intravascular Coagulation (DIC): A condition that causes tiny blood clots and areas of bleeding throughout the body. Severe infections, surgery, or complications of pregnancy are conditions that can lead to DIC.

AIM OF STUDY
to determine the prevalence of oncological and hematological disease among displaced population in sulaymaniyah province.

METHODS
this retrospective study was performed on oncological and hematological disease patients which are register in the Hiwa Cancer hospital and chronic disease center in sulaymaniyah province. During the period between 1st January 2014 to10th October 2017.Atotal of 722 patients, 382 females and 340 males constituted the study group. During that period, I am manager of that center and monitoring all the work.

Data were collected directly from the patients during monthly registration which including: name, age, sex, residence (previous and recent one), type and duration of cancer disease, and if patient complain from single or multiple cancer disease.

Each patient has special sheets and code number on computer containing full information and according to it drugs supply to the patient in sulaymaniyah province in corporation with Hiwa Cancer hospital.

For Statistical Analysis: SPSS _25 (statistical package for social sciences- version 25) and CHI _square test was used to analysis the group percentage in addition to statistical figure.

Variables were described using frequencies and percentages. a P _value >0.05 was consider to be not significant and P _value <0.05 consider to be significant.

RESULTS

Among the (722) patients studied (382) of them were females and (340) were male and female to male ratio was to be 1.12: 1 chi-square was not significant (P _ value >0.05).

In this study (565) patients affected by cancer, breast cancer, leukemia and gastrointestinal cancer were noticed in a higher percentage among displaced patients, while (165) patients with benign hematological diseases.

Table 1: frequency of cancer and benign hematological disease

Cancer type	Total No.	Freq.	Hematological disorder	Total No	Freq.
Breast	135	18.69%	Aplastic anemia	31	4.30%
Leukemia	81	11.21%	ITB	29	4.01%
Gastrointestinal tract	74	10.24%	Anemia oh chronic disease	21	2.91%
urinary tract	53	%7.34	Coagulation disorder	17	2.35%
Lymphoma	42	5.81%	Bleeding tendency	17	2.35%
Lung	39	5.40%	Hemophilia	16	2.21%
Gynecological	37	5.12%	Auto immune hemolytic anemia	12	1.68%
Brain and CNS	27	3.73%	Iron deficiency anemia	11	1.53%
Nasopharyngeal	25	%3.46	Thalassemia	3	0.41%
Sarcoma	21	2.90%			
Skin	12	1.66%			
Thyroid	11	1.52%			
Multiple myeloma	8	1.11%			
Total No	**565**	**78.25%**	**Total No**	**157**	**21.75%**
Total No			**722**		**100%**

Table 2: shows that most patients in the current study were from Anbar and Diayala province were high percentage rate observed.

The prevalence of cancers disease among displaced population in this study was (2155) patient per million population (PMP).

Table 2: distributions of patients according to the original province

Province	Family Number	Population Size	patient Number	Prevalence / 10000
Anbar	18603	111618	205	18.36
Ninawa	13016	39606	74	18.68
Diayala	11265	67590	186	275.33
Salahaddin	6601	78096	113	14.46
Baghdad	4238	25428	128	50.33
Babylon	2110	12660	16	12.63
Total No.	**55833**	**334998**	**722**	**21.55**

Table 3: annual distribution of patients according to the province

Province Years	Anbar	Diayala	Baghdad	Salah addin	Ninawa	Babylon	%
2014	60	88	33	38	27	4	34.62
2015	34	19	13	8	10	1	11.78
2016	79	43	38	30	17	7	29.63
2017	32	36	44	37	20	4	23.97
Total No.	**205**	**186**	**128**	**113**	**74**	**16**	**100**

Distribution of patients according to their residence in sulaymaniyah province show that most of them lives in sulaymaniyah city and about one third lives in different districts of the province.

Table 4: distribution of the patients according to new residence

District	Total No.	Frequency
Sulaymaniyah	2229	62.85%
Darbandikhan	275	7.75%
Chamghamal	258	7.27%
Ranya	156	4.39%
Peramagroun	145	4.08%
Dukan	125	3.52%
Halabja	110	3.10%
Kalar	99	2.80%
Arabit	75	2.11%
Kifri	35	0.99%
Pishdar	21	0.60%
Said Sadiq	18	0.50%
Total No.	**3546**	**100%**

Figure 1: show that most displaced people lives outside the camps which represent (92.81%) of group study. While the total number of displaced population lives inside the sixth camps represent (7.19%).
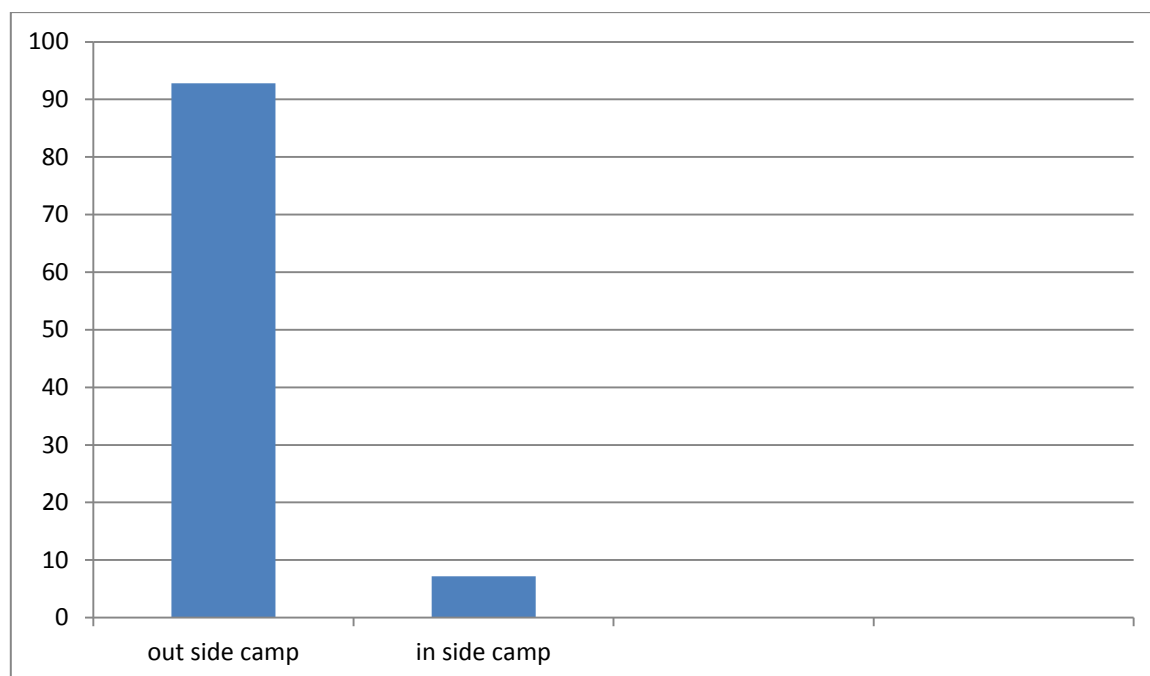
Figure 1: habitation of displaced population

DISCUSSION

After attach of isis during 2014 and due to unstable security environment people from different province in Iraq left their original houses and migrate to other places. These conflict has result in large _scale displacement across the country.

Large number of displaced people about (60%) reach to Kurdistan region and the number was (1341450) person with a total number of (38) camps (11). Ministry of health in Baghdad and with cooperation with sulaymaniyah directorate of health start a program of registration of chronic patients including cancer disease and supply them with his medication. Hiwa cancer hospital (HCH) which opened in 2007 was become the second largest public provider of cancer care in Iraq (1). internally displaced patients who reside in sulaymaniyah province have treated in it and 35% of HCH patients are internally displaced. (12)

In this study, total number of patients are (722). cancer patients were (565) in 78.25% and (165) patients with benign hematological disease in 21.75%.the first cause was breast cancer which responsible for 18.89% of cases, while the second cause was leukemia in 11.21% and gastrointestinal cancer thirdly in 10.24%(15). Which are compatible with high prevalence of cancers diseases in our population associated with broken of health system especially during disaster. These result are similar to that present in Syria and Lebanon (6).

Regarding distributions of patients according to the original residence, table (2) shows that most patient in the current study were from Al _anbar (205) patient and Diayla (186) patient province were high percentage rate observed. And this run with stabilization of huge number of family from these provinces in the different part of sulaymaniyah province.

The prevalence of cancer disease among displaced population in this study was (2155) patient per million population (PMP). which high in compared to other countries like Syria 145 /100000, in Lebanon 200/100000 and in Saudi Arabia 91 /100000(4) which reflect the medical situation of each country.

Table 3 show that in 2014 a lot of patients reach HCH (250) and in 2016 the no. was (214) patients, this due to the large number of displaced patients (15). according to Iraqi cancer board in 1991 the number of ca. patients was(5720) and increase to reach(25556) patients in 2016 due to multiple factors and the incidence in female was larger than in male (14).in Kurdistan region the prevalence was 92 /100000 person in 2017 which lower than other province of Iraq which represented the quality of health system (3).in Syria the first three ca. among displaced people was breast, brain and

Lung(9). Frequency of ca. breast in women was very high in Iraq (21%), in Syria (30%), in Lebanon (39%) from all cases of ca. register (6). Distribution of patients according to their residence in sulaymaniyah province show that most of them lives in sulaymaniyah city (2229) and about one third lives in different districts of the province (1317) as in table (4). And this may due to both medical reason represented by availability of specialized center for oncological and hematological disease and the need of patients for continues checking and fallow up. The none medical reason represented by availability of school and shopping center and large number of apartment and other services.

Figure (1) show that the total number of displaced family was (60155) with a total number of (360930) person according to the registration of the ministry of migration and displace in sulaymaniyah province branch and counting of human organization till August 2017. (55833) family of displaced people with a total number of (334998) person lives outside the camps which represent (92.81%) of group study in different part of sulaymaniyah province. While the total number of family lives inside the sixth camps in sulaymaniyah was (4322) with a total number of (25932) person and represent (7.19%) of displaced population (11).

This mostly related to different factor including social and educational level and lifestyle of the family and gross income and the time at which family reach sulaymaniyah province.

The current study shows no big differences between female and male regarding the incidence as 52,91%female (382) patients while male was 47,09%(340) patients. High number of female partly due to the structure of our population in Iraq which is due to multiple reason (recurrent wars and migration outside).

according to the type and subtype of cancers disease, our study shows that in leukemia; chronic myeloid leukemia CML was (24) patients, acute myeloid leukemia AML was (20), acute lymphatic leukemia ALL was (19), chronic lymphatic leukemia CLL was (18). While in lymphoma: Hodgkin HL was (23) and non - Hodgkin NHL was (19). GIT cancer show that colonic ca. was (24), gastric ca. was (20), liver ca.was (16), small bowel ca.was (7) and ca.of the rectum was (7). ca. of the urinary system show that ca. prostate and bladder was (25), testicular ca. was (15) and

plasmid urethral ca.was (13). in sarcoma (12) was osteosarcoma and (9) was ewing sarcoma. In gynological cancer, uterus and ovarian ca. was (26) and cervical was (11).

For benign hematological disorder among displaced patients the total number was (157) and the fallowing disease with their percentage are; aplastic anemia (31), idiopathic thrombocytopenic purpura ITP (29), anemia of chronic disease (21), coagulation disorder (17), bleeding tendency (17), hemophilia (16), auto immune hemolytic anemia (12), iron deficiency anemia (11), thalassemia (3) as shown in table 1.

Those patients were treated in HCH where palliative care and bone marrow transplant unit introduced in 2016(12).

CONCLUSSION

The prevalence of cancer and hematological disease among displaced people in sulaymaniyah province is high. Most of displaced people lives outside the camps. Breast cancer and leukemia constituted the top of these diseases. There are a large number of displaced patients from anbar and diayla governorates.

RECOMMENDATION

The multiple wars and disaster that's occurred in Iraq result in huge number and different type of cancers so efforts should be directed towards establishing national program for cancer control focusing on screening and early detection of different type of cancers including screening of the all families with cancer including medical history and screening province with high rate incidence and high level of biological contamination to reduce the rate of cancers among our population.

each health directorate in Iraq should have an oncologist center with specialized team that deal with all patients and drugs which supply to the patients need to be always offered.

REFERENCES

1. Https:www.iraqakhbar.com.9/2/2019.
2. Stuart, H., Ralston, S.H., Penman, I.D., Strachan, M.W.J. and Hobson, R.P. "Oncology. Davidson,s Principles and Practice of Medicine 23 rd edition." *Churchill Livingstone, Philadelphia* (2018): 1313-1336.
3. Https;www.m.thebaghdadpost.com.3/2/2018.
4. Https: www.albasaernewspaper.com. .net.4/2/2019.
5. Https:www.arabic.euronews.com.10/8/2017.
6. Https; www.alaraby.co.uk 24/10/2018
7. Https: www. who int com.12/9/2018.
8. Https;www .ar.m.wikipedia. org /wiki/cancer.
9. Https: www.aljazeera.net 3/2/2019.
10. Https: www.alghadpress.com.30/6/2018.
11. Chronic disease center; monthly report; October (2017).
12. Skelton, M., Mula-Hussain, L.Y. and Namiq, K.F. "Oncology in Iraq's kurdish Region: Nanigating Cancer,War,and Displacement." Https:ascopubs.org. (2016).
13. Robinson, J. Https:www.webmd.com.blood disorder type and treatment (2019).
14. Iraqi Cancer Registry 2016. Iraqi cancer board ministry of the health. Iraq.
15. Hiwa Cancer hospital, monthly report (2017).

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