CHAPTER ONE

INTRODACTION

1.1 Introduction to cancer

Cancer is an abnormal growth of cells. The cancer cells continuously multiply in site of lack of space and nutrition. Cancer cells can be differentiated from the other healthy cells in being different in shape, improper function and capacity to spread to other parts of the body. The study of cancer and tumors is called Oncology. Cancer is no single disease but is a group of diseases. (Health plus 24)

Tumors can be benign or malignant. The original tumor is called as primary tumor travel through the circulatory system to form new tumor called as secondary in other organs.(Health plus 24)

One of most important issues that facing human kind now adages is the threaten diseases that attack human body systems mainly cancer disease. Malignant diseases is widely prevalent in the west, almost a third of population on will develop cancer at during their life and the geographical distribution, plays a role that the incidence of specific tumors varies is geographical location, but the cause varies, for example England, Scotland and Wales have the highest death rate from malignant disease in world, mainly because of the very high incidence of lung cancer due to smoking. India also has the highest incidence of cancer of the gallbladder, mouth and lower pharynx, breast, colon and prostatic cancer have a relatively low incidence in Asian countries. Liver cancer occurs word wide but is rare in Europe and North America where the hepatitis B virus (HBV) carrier rate is low. Stomach cancer is particularly prevalent in Japan and is thought to be due to dietary factors. (Kumar and Clark, 2008)

In our interested topic is the frequency of cancer, the information are collected from statistic to seek general information about cancer epidemiology and most common type frequency in Soba hospital.

1.2The Problem of study

Certain types of cancerpredominant in Soba University Hospital and, theincidence are increased in the last decades but no statistical analyseswere done in Khartoum state hospitals.

1.3Objective

1.3.1 General objectives

To study the incidence of cancers in soba hospital

1.3.2 Specific objectives

- To high light the common cancerfrequencyin Soba Hospital.
- To study the incidence of cancers according to age and gender
- To correlate the findings with age and gender.

1.4Thesis outline

The general framework of this research was built in five chapter as follows:

- Chapter one is theintroduction to this thesis, this chapter discusses the problem and objectives of study.
- Chapter two dealing with literature review, and pervious study.
- Chapter three dealing with material.
- Chapter four present the result of this study.
- Chapter five present the discussion, conclusion, and recommendation of the thesis

CHAPTER TOW

LITERATURE REVIEW

2.1 CANCER

Cancer is a class of diseases characterized by out-of-control cell growth. There are over 100 different types of cancer, and each is classified by the type of cell that is initially affected. Cancer harms the body when damaged cells divide uncontrollably to form lumps or masses of tissue called tumors (except in the case of leukemia where cancer prohibits normal blood function by abnormal cell division in the blood stream). Tumors can grow and interfere with the digestive, nervous, and circulatory systems, and they can release hormones that alter body function. Tumors that stay in one spot and demonstrate limited growth are generally considered to be benign.

More dangerous, or malignant, tumors form when two things occur:

1. A cancerous cell manages to move throughout the body using the blood or lymph systems, destroying healthy tissue in a process called invasion
2. That cell manages to divide and grow, making new blood vessels to feed itself in a process called angiogenesis.

When a tumor successfully spreads to other parts of the body and grows, invading and destroying other healthy tissues, it is said to have metastasized. This process itself is called metastasis, and the result is a serious condition that is very difficult to treat. (MNT knowledge center)

2.1.1 Cancer spreads

In order to spread, some cells from the primary cancer must break away, travel to another part of the body and start growing there. Cancer cells do not stick together as well as normal cells do. They may also produce substances that stimulate them to move.

There are three main ways a cancer spreads

- Local spread.
- Through the blood circulation.
- Through the lymphatic system. (Cancer research UK).

2.1.2 Causes cancer

Cancer is ultimately the result of cells that uncontrollably grow and do not die. Normal cells in the body follow an orderly path of growth, division, and death. Programmed cell death is called apoptosis, and when this process breaks down, cancer begins to form. Unlike regular cells, cancer cells do not experience programmatic death and instead continue to grow and divide. This leads to a mass of abnormal cells that grows out of control.(BY PETER CROSTA 2008)

2.1.3 Genes - the DNA type

Cells can experience uncontrolled growth if there are damages or mutations to DNA, and therefore, damage to the genes involved in cell division. Four key types of gene are responsible for the cell division process: oncogenes tell cells when to divide, tumor suppressor genes tell cells when not to divide, suicide genes control apoptosis and tell the cell to kill itself if something goes wrong, and DNA-repair genes instruct a cell to repair damaged DNA. Cancer occurs when a cell's gene mutations make the cell unable to correct DNA damage and unable to commit suicide. Similarly, cancer is a result of mutations that inhibit oncogene and tumor suppressor gene function, leading to uncontrollable cell growth. (BY PETER CROSTA 2008)

2.1.4 Symptoms of cancer

Cancer symptoms are quite varied and depend on where the cancer is located, where it has spread, and how big the tumor is. Some cancers can be felt or seen through the skin - a lump on the breast or testicle can be an indicator of cancer in those locations. Skin cancer (melanoma) is often noted by a change in a wart or mole on the skin. Some oral cancers present white patches inside the mouth or white

spots on the tongue.Other cancers have symptoms that are less physically apparent. Some brain tumors tend to present symptoms early in the disease as they affect important cognitive functions. Pancreas cancers are usually too small to cause symptoms until they cause pain by pushing against nearby nerves or interfere with liver function to cause a yellowing of the skin and eyes called jaundice. Symptoms also can be created as a tumor grows and pushes against organs and blood vessels. For example, colon cancers lead to symptoms such as constipation, diarrhea, and changes in stool size. Bladder or prostate cancers cause changes in bladder function such as more frequent or infrequent urination.As cancer cells use the body's energy and interfere with normal hormone function, it is possible to present symptoms such as fever, fatigue, excessive sweating, anemia, and unexplained weight loss. However, these symptoms are common in several other maladies as well. For example, coughing and hoarseness can point to lung or throat cancer as well as several other conditions.When cancer spreads, or metastasizes, additional symptoms can present themselves in the newly affected area. Swollen or enlarged lymph nodes are common and likely to be present early. If cancer spreads to the brain, patients may experience vertigo, headaches, or seizures. Spreading to the lungs may cause coughing and shortness of breath. In addition, the liver may become enlarged and cause jaundice and bones can become painful, brittle, and break easily. Symptoms of metastasis ultimately depend on the location to which the cancer has spread.(BY PETER CROSTA 2008)

2.1.5 Cancer classified

There are five broad groups that are used to classify cancer.

1. Carcinomas are characterized by cells that cover internal and external parts of the body such as lung, breast, and colon cancer.
2. Sarcomas are characterized by cells that are located in bone, cartilage, fat, connective tissue, muscle, and other supportive tissues.

3. Lymphomas are cancers that begin in the lymph nodes and immune system tissues.
4. Leukemia's are cancers that begin in the bone marrow and often accumulate in the bloodstream.
5. Adenomas are cancers that arise in the thyroid, the pituitary gland, the adrenal gland, and other glandular tissues.Cancers are often referred to by terms that contain a prefix related to the cell type in which the cancer originated and a suffix such as -sarcoma, -carcinoma, or just -OMA. Common prefixes include:

- Adeno- = gland
- Chondro-= cartilage
- Erythro-= red blood cell
- Hemangio- = blood vessels
- Hepato- = liver
- Lipo- = fat
- Lympho- = white blood cell
- Melano- = pigment cell
- Myelo- = bone marrow
- Myo- = muscle
- Osteo- = bone
- Uro- = bladder
- Retino- = eye
- Neuro- = brain.(BY PETER CROSTA 2008)

2.1.6 Cancer diagnosed and staged

Early detection of cancer can greatly improve the odds of successful treatment and survival. Physicians use information from symptoms and several other procedures to diagnose cancer. Imaging techniques such as X-rays, CT scans, MRI scans, PET scans, and ultrasound scans are used regularly in order to detect where a tumor is located and what organs may be affected by it. Doctors may also conduct an endoscopy, which is a procedure that uses a thin tube with a camera and light at one end, to look for abnormalities inside the body. Extracting cancer cells and looking at them under a microscope is the only absolute way to diagnose cancer. This procedure is called a biopsy. Other types of molecular diagnostic tests are frequently employed as well. Physicians

will analyze your body's sugars, fats, proteins, and DNA at the molecular level. For example, cancerous prostate cells release a higher level of a chemical called PSA (prostate-specific antigen) into the bloodstream that can be detected by a blood test. Molecular diagnostics, biopsies, and imaging techniques are all used together to diagnose cancer. (BypeterCrosta2008)

2.1.7 Cancer treated

Cancer treatment depends on the type of cancer, the stage of the cancer (how much it has spread), age, health status, and additional personal characteristics. There is no single treatment for cancer, and patients often receive a combination of therapies and palliative care. Treatments usually fall into one of the following categories: surgery, radiation, chemotherapy, immunotherapy, hormone therapy, or gene therapy (By peter Crosta 2008**)**

2.1.8 Cancer prevented

Cancers that are closely linked to certain behaviors are the easiest to prevent. For example, choosing not to smoke tobacco or drink alcohol significantly lower the risk of several types of cancer - most notably lung, throat, mouth, and liver cancer. Even if you are a current tobacco user, quitting can still greatly reduce your chances of getting cancer. Skin cancer can be prevented by staying in the shade, protecting yourself with a hat and shirt when in the sun, and using sunscreen. Diet is also an important part of cancer prevention since what we eat has been linked to the disease. Physicians recommend diets that are low in fat and rich in fresh fruits and vegetables and whole grains. Certain vaccinations have been associated with the prevention of some cancers. For example, many women receive a vaccination for the human papillomavirus because of the virus's relationship with cervical cancer. Hepatitis B vaccines prevent the hepatitis B virus, which can cause liver cancer. Some cancer prevention is based on systematic screening in order to detect small irregularities or tumors as early as possible even if there are no clear symptoms present. Breast self-examination, mammograms, testicular self-examination, and Pap

smears are common screening methods for various cancers.(By peter Crosta 2008)

2.2 previous studies

2.2.1Pattern and incidence of cancer at El ObeidHospital, Western Sudan.

280 new cancer patients were admitted to El Obeid Teaching Hospital in 2 years, 132 of them were males. There were 111new cancer patients in 2006 and 169 patients in 2007. The increase rate of cases diagnosed in 2007 was 52.3%. The cancer incidence rate was4.6per 100,000 for the year 2006 and 7.0 per 100,000 for the year2007.The age range was between 20 and 85 years for males (mean ±SD was 61.8 ± 14 years) and between 18 and 80 years for females (mean± SD was 56.8 ± 14.4 years). The relative frequency rate of different cancers according to organ affectedcancer of the gastrointestinal tract was the commonest malignancy accounting for 135 cases (48.2%) of the study group, followed by breast cancer (19.3%), cancer of the female genitalia (8.9%) and leukemia (4.2%). The gastro-intestinal tumors were hepatocellular carcinoma (42cases), esophageal cancer (35 cases), gastric cancer (26 cases), recto-sigmoid (18 cases) and cancer of the pancreas (14 cases). Leading cancers in males were gastrointestinal tumors, leukemia and skin, while the leading cancers in females were cancers of the gastrointestinal tract, breast and uterine cervix. (El Bushra Ahmed Doumi[1], Mohammed Adam Ahmed[2], Abdel Salam Mohamed Hamad[)]

2-2-2Cancer incidence in Khartoum, Sudan

First results from the Cancer Registry, 2009–2010.In 2009, the first National Population-based Cancer Registry (NCR) was established in Sudan. We report in this study, the first data from the NCR for Khartoum State for the period 2009–2010. The NCR staff used passive and active approaches to collect data on cancer diagnosed by all means in Khartoum State. Rates were age standardized to the 2010 Sudan Standard Population and 1966 and 2000 World Stand9ard Population and expressed per 100,000 populations. During 2009–2010, 6771 new

cancer cases were registered. Of those, 3646 (53.8%) cases were in women and 3125 (46.2%) were in men. The most commonly diagnosed cancer among women was breast followed by leukemia, cervix, and ovary, and among men it was prostate cancer followed by leukemia, lymphoma, oral, colorectal, and liver. In children less than 15 years of age, leukemia was the most common cancer followed lymphoma, and cancer of the eye, bone, kidney, and the brain. The overall age-standardized rate (ASR) per 100,000population was higher women (124.3) than in men (90.8) using 2010 Sudan Standard Population.

Similarly, it was higher in women (188.6 and 206.3 per 100,000 population) than in men (145.4 and 160.0 per 100,000 population) using 1966 and 2000 World Standard Population, respectively. The data from NCR indicated that prostate and breast as the most commonly diagnosed cancer sites in men and women in Khartoum, while cancer of the cervix trailed behind portraying a cancer picture similar to that of the developed world. Despite the study limitations, the NCR data gave a fair representation of cancer profile of Khartoum State and underscored the need for high-quality cancer registries in Sudan.(Intisar E Saeed,H-Y,K H, M and I.M,12MAY2014)

2-2-3Common Cancer Types

Cancer incidence and mortality statistics reported by the American Cancer Society[1] and other resources were used to create the list. To qualify as a common cancer for the list, the estimated annual incidence for 2014 had to be 40,000 cases or more. The most common type of cancer on the list is breast cancer, with about 235,000 new cases expected in the United States in 2014. The next most common cancers are prostate cancer and lung cancer. Because colon and rectal cancers are often referred to as "colorectal cancers," these two cancer types are combined for the list. For 2014, the estimated number of new cases of colon cancer and rectal cancer are 96,830 and 40,000, respectively, adding to a total of 136,830 new cases of colorectal cancer. (: American Cancer Society, 2014. Last accessed March 20, 2014).

The following table (2-2-3-1) gives the estimated numbers of new cases and deaths for each common cancer type:

Cancer Type	Estimated New Cases	Estimated Deaths
Bladder	74,690	15,580
Breast (Female – Male)	232,670 – 2,360	40,000 – 430
Colon and Rectal (Combined)	136,830	50,310
Endometrial	52,630	8,590
Kidney (Renal Cell and Renal Pelvis) Cancer	63,920	13,860
Leukemia (All Types)	52,380	24,090
Lung (Including Bronchus)	224,210	159,260
Melanoma	76,100	9,710
Non-Hodgkin Lymphoma	70,800	18,990
Pancreatic	46,420	39,590
Prostate	233,000	29,480
Thyroid	62,980	1,890

2-2-4Most Common Cancer in the U.S

The most common type of cancer overall is skin cancer, responsible for more than a million cases of cancer in the United States yearly. That said, non-melanoma skin cancers cause fewer than 1,000 deaths per year.

The most common cause of cancer excluding skin cancer is lung cancer. It was estimated that in 2010 there would be 220,000 **new cases** of lung cancer diagnosed in the United States. This is followed by prostate cancer (217,730 cases), breast cancer (209,060 cases), colon and rectal cancers (142,570 cases), and bladder cancer (70,530 cases).

2-2-4-1 Most Common Cancer in Women

In women, breast cancer is the most common type of cancer, yet nearly twice as many women die from lung cancer as do from breast cancer (lung cancer in women).

2-2-4-2Most Common Cancer in Men

In men, prostate cancer is the most common form of cancer diagnosed, but roughly 3 times as many men die from lung cancer as do from prostate cancer. Lung Cancer in Men (By Lynne Eldridge MD)

2-2-5Cancerincidence and mortality in Massachusetts (2002-2009)

From 2005 through 2009, there were 184,339 newly diagnosed cases of cancer and 65,531 cancer deaths among Massachusetts residents, an average of 36,868 cases and 13,106 deaths annually. The average annual age-adjusted incidence rate for all cancers combined was 513.0 per 100,000 persons and the average annual age-adjusted mortality rate was 179.4 per 100,000 persons. Over the period 2005-2009, incidence rates for all invasive cancer sites decreased annuallyby 1.8% for males and increased by 0.4% for females, although neither change was statistically significant. Mortality from all types of cancer combined decreased from 2005-2009 by 2.1% annually for males and 1.2% for females. As for incidence, neither mortality decrease was statistically significant.

Prostate cancer was the most common type of newly diagnosed cancer among. Massachusetts males from 2005-2009, accounting for 28.1% of all new cancers among Massachusetts males. The average annual age-adjusted incidence rate of prostate cancer was 160.4 per 100,000 males, and the mortality rate was 23.1 per 100,000. From 2005 through 2009, the annual incidence rate of prostate cancer decreased an average of 3.3% per year and the mortality rate decreasedby 2.1% per year, neither change being

Statistically significant. From 2005-2009, invasive breast cancer was the most common type of newly diagnosed cancer among Massachusetts females, accounting for 28.5% of new cancers among females. The average annual age-adjusted incidence rate of breast cancer was 134.2 per 100,000 females. The incidence rate of female invasive breast cancer increased an average of 2.1% per year from 2005-2009 but this increase was not statistically significant. The average annual age-adjusted mortality rateof invasive breast cancer was 21.8. Per 100,000 and decreased from 2005 through 2009 by

1.7%annually; this change also was not statistically significant. The age-adjusted incidence rate of in situbreast cancer for Massachusetts females was 46.9 per 100,000. From 2005 through 2009, the incidence of in situbreast cancer increased 1.4% annually, although this was not a statistically significant change.

Cancer of the bronchus and lung was the most common cause of cancer deaths among both Massachusetts males and females during 2005-2009, accounting for 28.4% of all cancer deaths among males and 26.7% of all cancer deaths among females. During this time Period, the mortality rate of cancer of the bronchus and lung In Massachusetts decreased (Deval L. Patrick, Governor Timothy P. Murray, Lieutenant Governor 2005-2009)

2-2-6Cancer Incidence in Shendi and Almatamma Localities, River Nile State - Sudan2012.

The male patients were 141 and female patients were 224. The mean age of presentation was 54.4 years (range between 4 and 90 years). The incidence rate was 21.7 per 100,000. The age standardized rate was 194.4 per 100,000. The male to female ratio is 1:1.6. The relative frequency rates for different types of cancers and the most common type of malignancies in female breast cancer 85 cases (37.9%), female genital tract 42 cases (18.8%), GIT33 cases (14.1%), then head and neck 20 cases (8.9%). And most common type malignancies in male were GIT 33 cases 23.4%), prostate 29 cases (20.6), leukaemia16 cases (11.3%), then head and neck 15 cases (10.6%). But in both meal and female the most common cancer was GIT ratio is 1:1. (byAhmed Mohammed, Ahmed salih (2009-2012).

CHAPTER THREE

MATHOD AND MATERIAL

The data of this thesis were mainly collected from the statistical section at soba hospital, when statistical records for all cases came to soba hospital we interest just to the patients diagnose by cancer during period 2009 to 2011.

3.1 Clinical data

The patients who diagnosed as having cancer will incidence in study sample, were 839patients(male and female), with ages range in male patients, (11_31)yearsold was28 patients**,** (32_50)years old was 82patients**, (**51_71)years old was 207 patients,(less than93)years old was one patients. The ages range in female were, (13_33)years old was 75patients, (34_54)years old was 182patients,(55_75)years old was 192patients, (76_96)years old was 25patients.

The frequency of site of cancer in all samples was 22 types of cancer at sob hospital during 2009_2011.

3.2 Analysis data

The data analyzed by using software computer system to incidence the site of tumor, and correlated to age and gender, data collected from soba statistical department by table sheet classed to four column, number of patient, gender, age, and site of the cancer.

CHAPTER FOUR

Results

The following tables and figures presented the statistical data obtained from Soba hospital during the period from January 2014 to march 2014.

Table 4.1 Descriptive Statistics of Males and Females Ages, Mean and Standard Deviation.

Descriptive Statistics

Ages	N	Minimum	Maximum	Mean	Std. Deviation
Male	395	11.00	100.00	59.09	±15.75
Females	444	13.00	96.00	49.81	±16.44

Table 4.2Age classes (Males), Frequency.

Age Classes (Males)	**Frequency**
11—31	28
32-50	82
51-71	207
72-92	74
>93	1

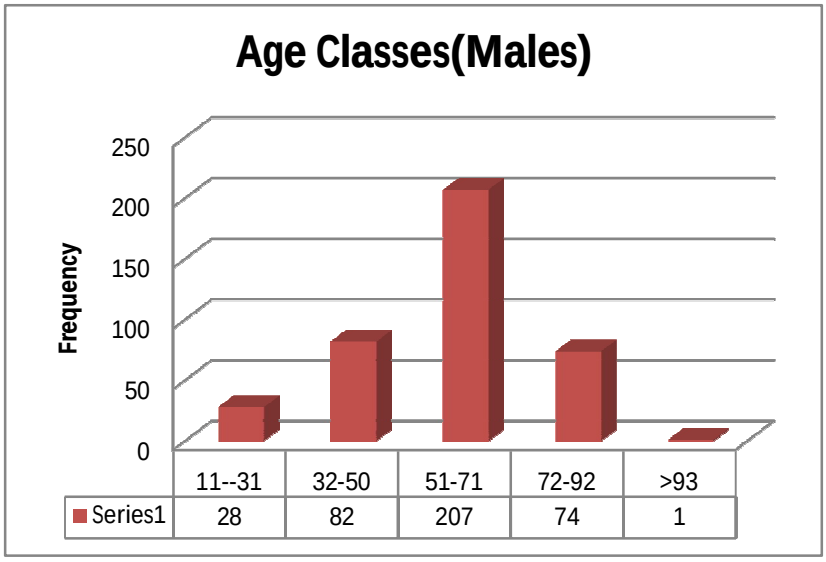

Figure 4.1Age classes (Males) and Frequency.

Table 4.3Age classes (Females), Frequency

Age Classes(Females)	**Frequency**
13-33	75
34-54	182
55-75	195
76-96	25

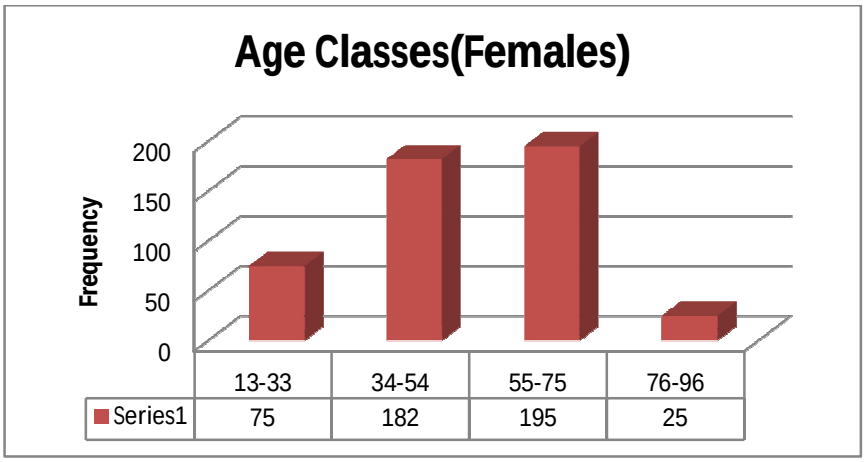

Figure 4.2Age classes (Females) and Frequency

Table 4.4Site of Cancers, Frequency and Percentages (All Samples)

Site Of Cancers	Frequency	Percentages%
Kidney	8	0.9
Bladder	93	11.1
Brain	28	3.3
Breast	87	10.4
Colon	84	10.0
Gall Bladder	4	0.5
Liver	51	6.1
Lung	13	1.5
Lymph	18	2.1
Esophagus	8	0.9
Ovaries	29	3.5
Pancreas	67	7.9
Pelvis	1	0.1
Prostate	76	9.1
Rectum	72	8.6
Small Bowl	1	0.1
Spine	2	0.2
Spleen	5	0.6
Stomach	90	10.7
Thyroid	7	0.8
Uterus	86	10.3
Ovary& Uterus	9	1.1
Total	839	100%

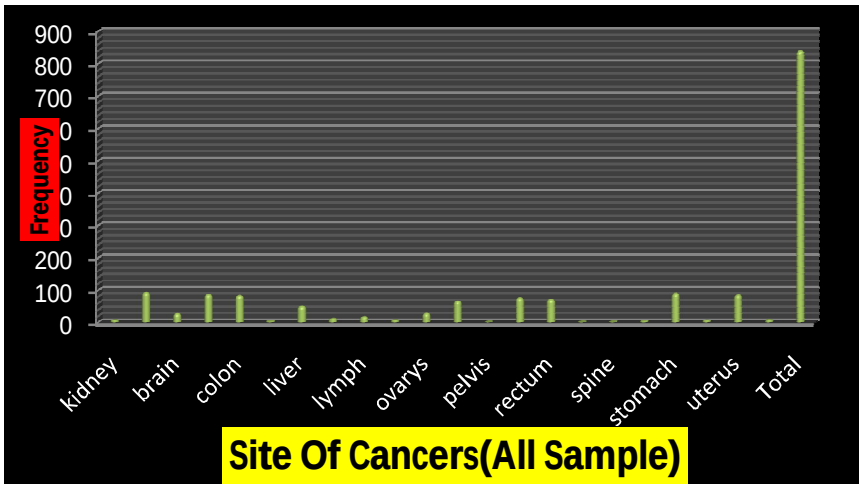

Figure 4.3 Site of Cancer (All Samples)

Table 4.5 Site of Cancers, Frequency and Percentages (Male Sample)

Ca Class	Frequency	Percentages%
GIT*	139	31.3
AASS*	68	15.3
UTS*	63	14.2
Thyroid	2	0.5
Brain	26	5.9
Spine	2	0.5
Lymph	9	2.0
Prostate	72	16.2
Lung	13	2.9
Spleen	1	0.2
Total	395	89.0
Total	**44.4**	**100.0**

- ✓ ***GIT=Gastro intestinal tract including:***{Stomach, Esophagus, Rectum, Small intestine, Colon}
- ✓ ***AASS= Other Parts of Alimentary Tract :Hepato Biliary System) including:***{Liver, Pancreas, Gall Bladder}
- ✓ ***UTS= Urinary Tract System including:***{Kidneys, Bladder}

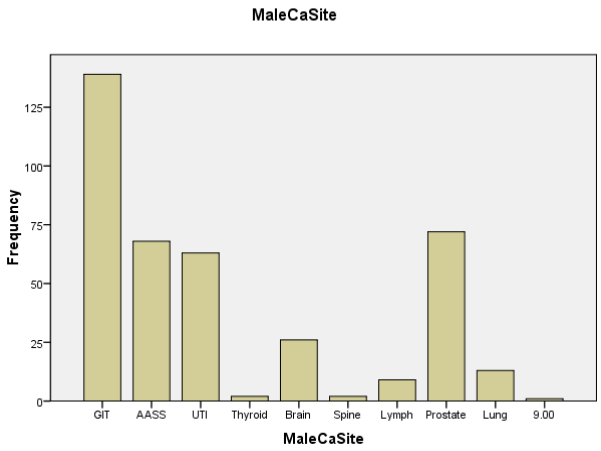

Figure 4.4 Site of Cancer (Male Sample)

Table 4.6Site of Cancers, Frequency and Percentages (Female Sample)

Ca class	***Frequency***	***Percentages%***
UTS*	42	9.5
Brain	3	0.7
Breast	86	19.4
GIT*	112	25.2
AASS*	58	13.1
REP*	125	28.2
Spleen	4	0.9
Lymph	9	2.0
Thyroid	5	1.1
Total	444	100.0

- ✓ ***GIT=Gastro intestinal tract including:***{Stomach, Esophagus, Rectum, Small intestine, Colon}
- ✓ ***AASS= Other Parts of Alimentary Tract :Hepato Biliary System) including:***{Liver, Pancreas, Gall Bladder}
- ✓ ***UTS= Urinary Tract System including:***{Kidneys, Bladder
- ✓ ***REP=Reproductive System:***{Ovaries, Uterus}

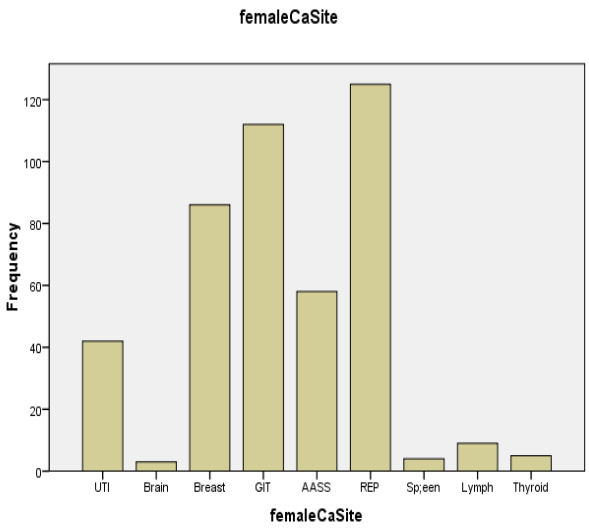

Figure 4.5 Site of Cancer (Female Sample

Table 4.7 Cross Tabulation between Age Class (Male) and Cancer Site

Age Class	11-31	32-50	51-71	72-92	>93	Total
Male Cancer Site						
GIT*	20	35	64	18	1	138
AASS*	2	17	36	13	0	68
UTS*	1	11	39	12	0	63
Thyroid	0	1	1	0	0	2
Brain	4	5	13	4	0	26
Spine	0	0	2	0	0	2
Lymph	1	3	4	1	0	9
Prostate	0	8	42	22	0	72
Lung	0	1	8	4	0	13
Spleen	0	0	0	1	0	1
Total cancer cases	28	81	209	75	1	394

*

- ✓ ***GIT=Gastro intestinal tract including:***{Stomach, Esophagus, Rectum, Small intestine, Colon}
- ✓ ***AASS= Other Parts of Alimentary Tract :Hepato Biliary System) including:***{Liver, Pancreas, Gall Bladder}
- ✓ ***UTS= Urinary Tract System including:***{Kidneys, Bladder}

Table 4.8 Cross Tabulation between Age Class (Females) and Cancer Site

Age Classes	13-33	34-54	55-75	76-96	Total
Female Cancer Site					
UTS*	2	13	18	9	42
Brain	0	1	1	1	3
Breast	15	42	25	4	86
GIT*	35	49	25	3	112
AASS*	12	14	29	3	58
REP*	8	58	55	4	125
Spleen	1	1	1	1	4
Lymph	2	4	3	0	9
Thyroid	0	1	3	1	5
Total	75	183	160	26	444

- ✓ **GIT=Gastro intestinal tract including:**{Stomach, Esophagus,
- ✓ Rectum, Small intestine, Colon}
- ✓ **AASS= Other Parts of Alimentary Tract :Hepato Biliary System) including**{Liver, Pancreas, Gall Bladder}
- ✓ **UTS= Urinary Tract System including:**{Kidneys, Bladder}
- ✓ **REP=Reproductive System:**{Ovaries, Uterus

Table 4.9 Correlations between Age (Females and Males) and Cancer Site

Correlations					
		Males Age	Cancer Site (Male)	Females Age	Cancer Site (Females)
Males Age	Pearson Correlation	1	.257**	-.042-	.[a]
	Sig. (2-tailed)		.000	.409	.
	N	395	395	395	0
Cancer Site (Male	Pearson Correlation	.257**	1	-.004-	.[a]
	Sig. (2-tailed)	.000		.930	.
	N	395	395	395	0
Females Age	Pearson	-.042-	-.004-	1	.[a]

	Correlation				
	Sig. (2-tailed)	.409	.930		.
	N	395	395	444	0
. Correlation is significant at the 0.01 level (2-tailed). ***a. Cannot be computed because at least one of the variables is constant.***					

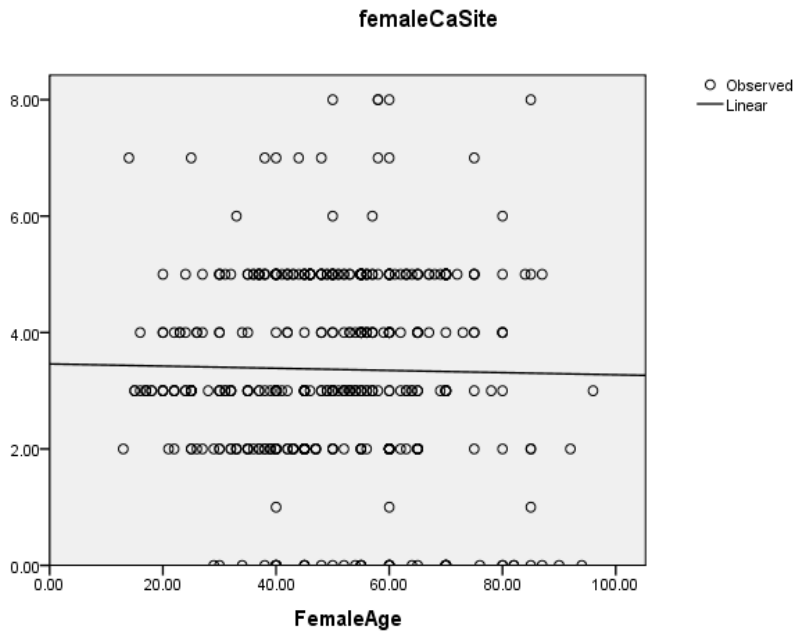

Figure 4.6 Scatter Plot shows a linear relation between the Female ages and Site of Cancer (Female Sample)

Table4.10 the coefficients (Female ages and Cancer site)

Coefficients					
	Un standardized Coefficients	Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta		
Female Age	-.002-	.005	-.018-	-.380-	.704
(Constant)	3.460	.258		13.423	.000

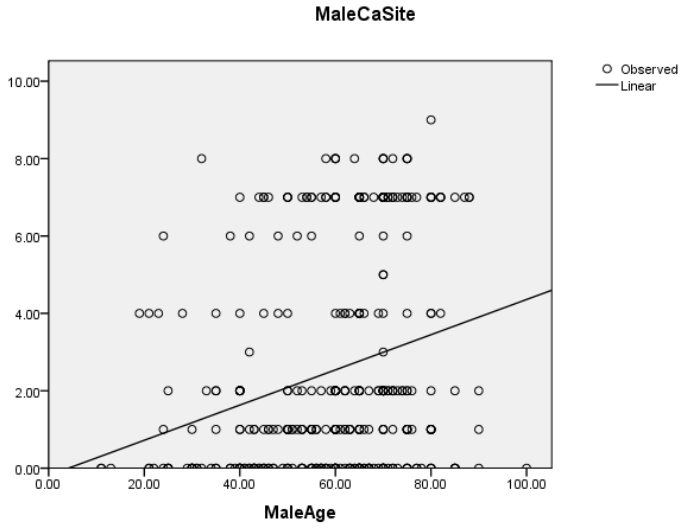

Figure 4.7 Scatter Plot shows a linear relation between the Males ages and Site of Cancer (male Sample)

Table4.11 the coefficients (male ages and Cancer site)

Coefficients					
	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Male Age	.045	.009	.255	5.212	.000
(Constant)	-.189-	.534		-.355-	.723

CHAPTER FIVE

DISCUSSION&CONCLUSION&RECONDIATIONS

5.1Discussion

In this study result show that 839 cancer patients were admitted at soba university hospital during (2009-2011), 444 were females patients, and 395were males patients. This disagree to 280 new cases cancer patients at Elobied hospital during 2006-2007,132 of them were males, and 148 of them were females. But in Khartoum, Sudanhigh rate cancer registry during 2009-2010, 6771 new cancer cases were registered. Of those, 3646cases were in women and 3125 were in men.In Soba hospitalthe age range was between 11-92 years for meals {mean age (59.09) and standard deviation (± 15.75)}, and btween13-96 years for females{mean ages were (49.81), standard deviation (±16.44)}.But the age range at Elobied hospital was between 20and 85 years for meals (mean± SD was 61.8 ± 14 years), and between 20 and 80 years for females (mean ± SD was 56.8 ± 14.4 years). This study show that the most common cancer type diagnosed in Soba hospital in both meal and female, bladder cancer 93 patients (11.1%), flowed by stomach 90 patients (10.4%),colon cancer 84 patients(10.0%),prostate cancer 76 patients (9,0%), rectum cancer 72 patients(8.6%), pancreas cancer 67 patients (7.9%). In meals the most common cancer type diagnosed at Soba hospital was gastro intestinal tract 139 patients (31.3%), in females the common cancer type was reproductive system 125 patients (28.2%). In Shendi and Almatamma localities, River Nile states, Sudan 2012, the most common type of malignancies in female breast cancer 85 cases (37.9%), flowed by female genital tract 42 cases (18.8%), GIT 33 cases (14.1%), then head and neck 20 cases (8.9%). And most common type malignancies in meal GIT33cases (23.4%), prostate 29 cases(20.6%), leukemia 16 cases (11.3%0, then head and neck 15 cases (10.6%), but in both meal and female the most common

cancer type was GIT ratio is 1:1. The most common type cancer reported by American Cancer Society 2012, was breast cancer (meal and female), 235,000new cases expected in the United States in 2012, the next most common type were prostate cancer and lung cancer. In other study in United State was skin cancer, responsible for more than A million cases of cancer in the United State yearly, flowed by lung cancer. It was estimated that in 2010 there would be 220,000 new cases of lung cancer diagnosed in United States, this flowed by prostate cancer217,730 cases, breast cancer 209,080cases.In women, breast cancer was most common cancer. In men, prostate cancer was common type cancer diagnosed in United States.

It is important to note that, the correlation between ages and location of cancer is significant among the males, and between females cannot be computed, tables (4.9), (4.8).

5.2**Conclusion**

839 cases affected by cancer came to soba hospital (2009-2011), studied to statistical the common types frequency of cancer, and conclusion of the results are as follows:

- The study shows that the rate of female's patients frequency is more than male's patient frequency.
- The common types of cancer frequency in soba hospital among males patients is gastro intestinal tract including(Stomach, Esophagus, Rectum, Small intestine and Colon),after that prostate cancer, then hepato biliary system cancer, urinary tract system, brain cancer, lung cancer, lymph cancer, thyroid and spin cancer and last spleen cancer.
- The common types of cancer frequency in soba hospital among females patients is reproductive system including (uterus & ovary), after that gastro intestinal tract cancer, then breast cancer, hepatobiliary system cancer, urinary tract system cancer, lymph cancer, spleen cancer, and last brain cancer.
- We found relationship between ages and site of caner, the affected of cancer increases with increases ages among of malespatients.
- But among females patients there is little relationship between ages and affected by cancer.

5.3Recommendation

The possible foreseen recommendable points when the scope of this study could by enumerated

Efforts to avoid the risk factors causing carcinogenesis should be exerted and assisted as much as possible.

Evaluating and assessing establishing the actual incidence records of cancer cases in Sudan (mortality and morbidity). All countries

Hospitals are to be subjected to such evaluating and monitoring efforts to prepare relevant special reports.

Establish of cancer center, specialized hospital to promote cancer related research in the country's various states, in particular of high incidence risk.

Organizing of systematic and/or periodical campaigns to meet the challenges of community, awareness issues aiming to raise awareness on cancer symptoms, signs, and prevent the measure.

Developing of guidance program (Cancer Treatment and Prevention Fundamental Guidelines) for clinical centers and specialized educational hospitals, such Guideline is to be broadcasted and discussion on mass media channels (TV health series).

Encouraging establishment of scientific health oriented civil society organization in Sudan to take cancer spreading threat and risk: historically, the international health –focused organization in Sudan an almost mainly implementing their intervention in conflicts and war torn areas mean while other relatively stable areas are not reached with such provided health support that most of its aspects an basically

primary health care. The need to address more recently discovered and aggravated disease in Sudan should critically be met with help of both national and international organization to raise awareness and mitigate cancer risk in country.

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