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Epidemiology, Risk Factors and Management of Esophageal Cancer in East of Sudan (Single center experience from 2016-2018)

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ABSTRACT

Esophageal Cancer is 6th common cause of cancer death worldwide, internationally the outcome of esophageal cancer is very poor. In Sudan esophageal cancer is also one of the most common malignancies and devastating disease with high mortality [1,3]. This study investigated esophageal cancer in the red sea state, east of Sudan over period October 2016 to October 2018, in port Sudan oncology center. The study included 40 patients, data was collected using a constructed structure pretest questionnaire, evaluated and compared with standard published literature.

Objectives: The study was aimed to look at the epidemiology, risk Factors, clinical presentations and different management modalities of esophageal cancer in the red sea state, east of Sudan.

Methods and Patients: This study was across sectional retro prospective study, centre based, and was conducted in Port Sudan Oncology Center in port Sudan, East of Sudan over period of two years from October 2016 to October 2018.

Results: 40 patients involved in the study, This study was showed that the female were more affected with disease(65%), all patients in this study (100%) were taking coffee with ginger and pepper regularly in the early morning, and this is considered as the most important risk factor was known through this study, while the other risk factor their percentage as following; Hot tea (95%), GERD(42.5%), Smoking(10%), Alcohol consumption (2.5%).Dysphagia was the shared symptom between all the cases(100%), while the other symptoms came in different percentage.

Conclusion: Esophageal Cancer was higher in female, more common in the age group 50_70 years old and is common in Beja tribe (50%). The most common risk factor is regular taking of coffee with ginger (100%). Unfortunately the mortality rate (52.5%) within 5-years after the diagnosis.

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Introduction

Esophageal cancer is the 6th most common cause of cancer death worldwide, approximately 17,000 cases of esophageal cancer occur annually in the United States and about 480,000 cases occur worldwide. Unfortunately, esophageal cancer typically is manifested at an advanced stage, and the majority of patients ultimately die of their disease [12]. In Sudan, earlier reports 1977 showed that the incidence of esophageal cancer was 1.4% of all malignant tumors. the disease affected both sexes equally; and was most common at the age group 50-69 [1]. In contrast, a study at 2012 from Gezira

province in central Sudan showed that 9.6% of patients referred for endoscopy proved to have esophageal cancer [2].

The main risk factors are tobacco smoking, coffee with ginger, alcohol consumption, inhalation, poor diet and acid reflux. These factors lead to chronic irritation of the esophageal mucosa. The main histopathological types of esophageal carcinoma are squamous cell carcinoma, which is common in developing world; and adenocarcinoma in developed world; which is now increasing and associated with condition known as Barrett's esophagus. The disease is diagnosed by barium swallow, endoscopy, biopsy and other investigations which done to assess the metastatic state. Treatment is based on the cancer's stage and location together

with the patient general condition; generally, the early stages is treated surgically, also chemotherapy and radiotherapy are used. In late stage; palliative treatment is main treatment option [4,5].

Patients and method

Port Sudan Oncology Center is a multispecialty referral center and the main cancer treatment center in red sea state, east of Sudan. This study is a center based descriptive cross-sectional study conducted over period of two years from; October 2016 to October 2018. All patients who presented oesophageal cancer and accepted to Participate in the study were included, data collected using a constructed structure questionnaire and hospital records. 40 patients participated in the study with clinical, radiological and pathological features of oesophageal cancer and they received various treatment modalities. The age, sex, geographical distribution, risk factors, clinical presentation, diagnostic modalities, different therapeutic modalities and associated complications were all evaluated and compared with standard published literature.

Results

Total of 40 patients with esophageal cancer, who satisfied the inclusion criteria were studied. There is female predominance 26 (65%), while male 14(35%), with male to female ratio of 1:2. Most of patients 30(75%) were more than 50 years' age, whereas those between 40-50 years were only 7(17.5%) and patients less than 40 years ago were only 3(7.5%0). Most of the patients were came from either Port Sudan or Gabit in 17(42.5%) and 7(17.5%) respectively. Where few patients were from Toker 5(12.5%) and sinkat 4 (10%). Few 7(17.5%) patients came from other parts of Sudan, Table (2). Most of the patients were from either Beja or Baniamer tribe in 20(50%) and 13(32.5%) respectively. few patients 7(17.5%) were from other tribes. Table, (1). All of the patients present with dysphagia 40(100%), Most of the patients present with weight loss and anorexia in 37(92.5%) and 32(80%) respectively. whereas few patient present with palpable cervical lymph nodes (L. Ns) and hoarseness of voice in 14(35%) and 32.5%), figure (1). The most common risk factors among patients were Coffee with ginger and pepper, Hot tea and gastroesophageal reflux disease GERD in 40(100%), 37(95%) and 17(42.5%) respectively. Less common risk factors included in this study were Smoking and Alcohol consumption in 4(10%) and 1(2.5%) respectively, Table (3) The most common histological pattern is squamous cell carcinoma (SCC) 39(97.5%). Less frequent histological pattern is Adenocarcinoma (CA) 1(2.5%). The most common sites of esophageal cancer are the upper third and lower third in 22(55%) and 12 (30%). Less common site of esophageal cancer is the middle third 6(15%). Most of the patients with esophageal cancer present at late stage 23(57.5%). Some patients present at early stage 15(37.5%). Few patients present with metastasis 2(5%). Most patients were treated with radiotherapy 20(50%), Some patients treated with chemotherapy 14 (35%). Few patients were treated with chemo radiotherapy 6(15%). The majority of patients were dead. Deaths were occurred in 21(52.5%). The outcome was good in patients presented earlier. Patients present at early stage were lived 19(47.5%).

Table: Ethnic Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Beja	20	50.0	50.0	50.0
	Baniamer	13	32.5	32.5	82.5
	Other	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Table 2: The Geographical Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	port Sudan	17	42.5	42.5	42.5
	Toker	5	12.5	12.5	55.0
	Gabit	7	17.5	17.5	72.5
	Sinkat	4	10.0	10.0	82.5
	Other	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

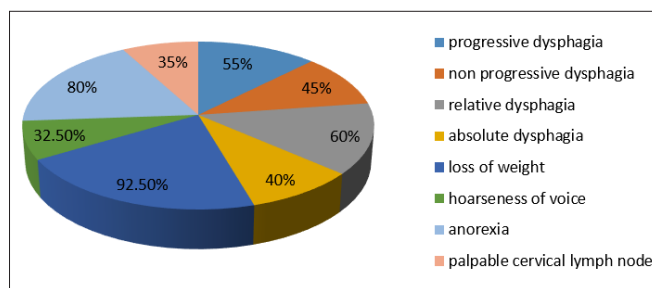


Figure 1: The Presenting Symptoms

Table 3: Risk Fact

Percentage	Repeats	Risk factors
Coffee with ginger and pepper	40	100%
Hot tea	38	95%
GERD	17	42.5%
Smoking	4	10%
Alcohol consumption	1	2.5%
Total	100	250%

Discussion

Esophageal cancer is one of the most common malignancies and has high rate of mortality in Sudan, and is the 3ed most common cancer in Port Sudan Oncology Center coming after breast and prostatic cancer. So this study was done in east of Sudan, red sea state to study the esophageal cancer. In this study forty patients whom satisfied the inclusion criteria were studied. The main age of most patients in the study was more than 50 years old, it was similar to old Sudanese study one by Ahmed Elhaj et al, and other Study by Asmaa Maher Hamad et al in Khartoum [1,2]. Also similar to the following studies; Saudi Arabia done by Magid H. Amer et al., In south Africa by Kanti et al. And internationally by peter C. et al. In the study the female is commonly affected with male to female ratio 1:2 [6-8]. Which is similar to studies done in Gezira and Khartoum [1,2]. The reverse of this ratio is seen in Saudi Arabia, South Africa, Iran and internationally [6-10]. Most of the patients came from Port Sudan and Gabit 17(42.5%), 7(17.5%) respectively. This was compared to Sudanese studies; Gezira study resulted in 13, 93 and 51 cases from Red Sea, Algardarif and kssala states respectively. Regarding the clinical presentations most of the patients in the study presented with Dysphagia, this is also similar to the study done in Sudan; Gazira, and Khartoum, also similar in Africa study done in Tanzania and in Iran study and finally similar to international study [1,2,8-10]. The most common histological type in this study is SCC. This is similar to the study done in Gazira, Khartoum, Saudi Arabia, South Africa. This is reversed in Japan where the Adeno carcinoma is more than SCC. Inter nationally the Occurrence of SCC to Adenocarcinoma is equal [1,2,6-8,11]. Regarding the site

of esophageal carcinoma in this study, the most common site is the Upper third. This is similar to study done in Khartoum, Gezira and Japan the most common site is the Middle third. On the other hand, the lower third is the most common site in studies done in Saudi Arabia and Iran [1,2,6,11,9]. There were Different modalities of treatment in this study, Radiotherapy is most common treatment option, then chemotherapy, chemo radiotherapy, surgery and palliative treatment according to the worseness of cancer. This is similar to studies done in Gazira, Khartoum, Saudi Arabia, South Africa, Japan, Iran, and also similar to the international study in this study the outcome of esophageal cancer is poor, the 5-Year survival rate is 10 %. This similar to poor outcome in studies done in Gezira, Khartoum and Iran [1,2,6,7,11,18,9].

Conclusion

Esophageal cancer was common in Bega tribe (50%). The most prevalence histopathological type is SCC (97%) with the upper third commonly attitude (55%). The most common risk factor is regular taking of coffee with ginger and paper (100%). All patient were presented with dysphagia (100%). Radiotherapy is main stay of treatment (50%). Five years survive is poor about (52.5%) of the Patient were dead within 5 year of diagnosis.

Recommendations

Not all risk factors can be controlled by people, but can control the life style factors such as: stop taking coffee with ginger and paper especially in the morning on empty stomach and stop the drinking hot tea and seeking early medical advice if you have chronic heart burn or have difficulty in swallowing. Also recommended to do a lot of efforts to support educational program to increase esophageal cancer awareness rural areas.

We also advise people in villages to cook in open space to avoid inhalation of fumes where one of the most common risk factor is result in screening programs done by frequent endoscopy assessment in that high risk area.

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