

Case study

## A SOCIO-DEMOGRAPHIC STUDY OF ESOPHAGUSCARCINOMA AT A TERTIARY CARE HOSPITAL OF MAHARASHTRA, INDIA

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### ARTICLE INFO

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### ABSTRACT

Esophageal cancer incidence rates vary internationally from region to region. Esophageal cancer is usually 3 to 4 times more common among men than women. Understanding of etiological factors like life style, diet and habits even social background of population supports primary prevention of carcinoma. The present study was carried out to find out the socio-demographic determinants of esophageal cancer in a tertiary care teaching hospital of central part of India. A Retrospective study was carried at Tertiary Care Centre in rural part of central India for a period of 6 years (2007-2013). A total of 703 patients suffering with different kind of carcinoma were reported at the hospital, of which 255 were retrieved as patients having esophageal carcinoma and reviewed. Patient history and profile like habits and socio-demographic records were collected and assessed. Majority of patients was on mixed diet. Out of 703 patients suffering with carcinoma in a specified period of six years, 255 patients had esophageal cancer. Data reveals predominance of males (51.76) over females (48.24). Majority of peoples belongs to remote areas with a history of chewing tobacco, smoking and consumption of alcohols. The present study shows that esophageal cancer constitutes 32.27% of GIT cancer cases reported in research hospital. Dysphagia and loss of weight were very commonly observed symptoms. Ulceration and lumen narrowing were also assessed in some patients. Wall thickening of esophagus were observed. Mostly lower and middle esophagus was found to have cell growth. Histopathological examination was also assessed. It was concluded from the data, that government had to take efforts to improve socio-economic status of peoples standing in remote areas. One had to take efforts to introduce a set of preventive measures so as to potentially reduce the risk factor causing the disease and increase a public awareness among the peoples.

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### INTRODUCTION

Carcinoma is a rising disease and one of the major cause among ten leading cause of death in India [1]. Utmost more than 2/3 population dies of this disease. The burden is expected to grow worldwide due to the growth and aging of the population, particularly in less developed countries, in which about 82% of the world's population resides. The adoption of lifestyle behaviors that are known to increase cancer risk, such as smoking, poor diet, physical inactivity, and reproductive changes (including lower parity and later age at first birth), have further increased the cancer burden in less economically developed countries. An estimated 14.1 million new cancer cases and 8.2 million cancer deaths occurred in 2012 worldwide [2]. It acquired six positions in respect of cancer related death in the universe. Generally male to female ration is high [1]. Appearances of symptoms are

very rare at initial face of cell growth [3]. Among various kind of cancer, esophageal carcinoma is a life-threatening disease due to lack of potential treatment. This malignancy extremely found in South India and also in Assam [4]. Study and understanding of etiology, risk factors and knowledge of symptoms will support to control and reduce the cases of esophageal malignancy [5]. Therefore, the chief objective of the present study was to find out the sociodemographic determinants of patients with esophageal cancer who visited in a tertiary care teaching hospital of in Central India.

#### Material and Methods:

Retrospective study was carried at Tertiary Care Centre in rural part of central India. The central India comprise of eleven districts of Vidharbha along with neighboring districts of Andhra Pradesh and Madhya

Pradesh. This particular region is specified as rural area. Study was conducted for a period of 6 years, from 1<sup>st</sup> January 2007 to 31<sup>st</sup> December 2013. A total of 703 patients suffering with different kind of carcinoma were reported at the hospital, of which 255 were retrieved as patients having esophageal carcinoma and reviewed. Patient history and profile like habits and socio-demographic records were collected and assessed.

**Statistical Analysis:**

All recorded data for studied years were entered in MS Excel and analyzed in the form of percentage and proportions whenever appropriate.

**Results:**

Socio demographic determinants of study were depicted in table 1. Study reveals 255 cases of esophagus carcinoma out of 703 patients visited to hospital. The peak incidence was observed in the age group of 61-70 with a total of 70 (27.45%) diagnosed followed by patients in their 4<sup>th</sup> and 5<sup>th</sup> decades. The youngest patient was aged 20 years while the oldest was recorded at 86 years. The age range was 20 to 86 years with a mean age of presentation 56.11 years with a standard deviation of 12.98. Out of 255 patients 132 (51.76) were male and 123(48.24%) were females. This suggests a male predilection in carcinoma esophagus. The male:female ratio was 1.07:1.

**Table 1: Age wise and gender wise distribution of esophagus**

Age Group (yrs)	Gender				Total	
	Male		Female			
	n	%	N	%	n	%
Upto 10 yrs	0	0.00	0	0.00	0	0.00
11-20 yrs	1	0.39	0	0.00	1	0.39
21-30 yrs	2	0.78	6	2.35	8	3.14
31-40 yrs	10	3.92	16	6.27	26	10.20
41-50 yrs	27	10.59	33	12.94	60	23.53
51-60 yrs	28	10.98	32	12.55	60	23.53
61-70 yrs	40	15.69	30	11.76	70	27.45
71-80 yrs	19	7.45	6	2.35	25	9.80
81-90 yrs	5	1.96	0	0.00	5	1.96
Total	132	51.76	123	48.24	255	100
Mean ± SD	58.55±13.21		53.49±12.25		56.11±12.98	

**Table 2 Distribution of study population according to habits**

Risk factors	No. of Patients	Percentage
Smoking	30	11.76
Alcohol	44	17.25
Vegetarian diet	83	32.55
Mixed diet	172	67.45
Obesity	22	8.63
Family History	1	0.39
History of peptic ulcer disease	16	6.27

Table 2, shows the association of possible high-risk factors with various GIT malignancies. In carcinoma of the esophagus 30 patients were smokers (11.76%) while 44 patients were alcoholic (17.25%). A total of 22 patients were obese (8.63%) and one patient had family history of

carcinoma esophagus (0.39%). History of acid peptic disease was elicited from 16 patients (6.27%).

Table 3 represents the various presenting symptoms in the patients diagnosed with carcinoma esophagus. The most common symptom was dysphagia which was experienced by 230 (90.20%) patients. This was followed by vomiting which was recorded in 204 patients (80.00%). History of loss of weight and appetite was obtained from 147 patients (57.65%) and 43 patients (16.86%) respectively. Upon reviewing the complete blood counts of patients with carcinoma esophagus it was found that 51 patients (19.4%) were anemic out of which 2(0.78%) had mild anemia. Moderate anemia and severe anemia were found in 41 (16.08%) patients had 8 (3.14%) patients respectively.

**Table 3: Symptomatology of patients of esophagus carcinoma**

Presenting Symptoms	No of patients (n)	Percentage %
Pain	24	9.41
Lump in abdomen	1	0.39
Vomiting	204	80.00
Nausea	27	10.59
Jaundice	8	3.14
Loss of appetite	43	16.86
Dysphagia	230	90.20
Loss of weight	147	57.65

**Table 4: Upper GI endoscopy findings in esophagus carcinoma**

Findings	No of patients (n)	Percentage (%)
Growth	190	75.69
Ulceration	18	7.17
Lumen Narrowing	47	18.73
Total	255	100.00

Table 4, represents the findings of upper GI endoscopy in 255 of carcinoma esophagus. One hundred and ninety patients (75.69%) had growth in the esophagus. Ulceration was reported in eighteen patients(7.17%) whereas lumen narrowing was observed in forty-seven patients (18.73%)

A total of 143 USG Abdomen were performed on patients with carcinoma esophagus. Seventy-one patients (49.65) were found to have liver secondaries. Ascites was found in 6 patients (4.20%) while fungiating mass, only in one patient (0.70%) and esophageal wall thickening was seen in two (1.40%) patients.

Ninety-nine patients were subjected to computer tomography (CT). Abdomen of five patients was found normal. Wall thickening of esophageal was found in four (1.57%) patients while thickening with liver secondaries were examined in fifty-two patients (20.39%). Accumulation of mass on abdomen had been observed in eleven patients (1.96) whereas mass with lymphdenopathy seen in five (1.96%) while seven (2.75%) were found to have mass with liver secondaries. Ascites and liver secondaries were found in five (1.96%) and four (1.57%) patients respectively.

Cancer in different anatomical sites of esophagus of all patients had been performed and recorded in table 5. Fifteen patients (5.9%) had carcinoma of the upper esophagus, hundred and two patients (40.0%) had

carcinoma of the middle 1/3 and one hundred thirty-eight patients had carcinoma of the lower 1/3 of the esophagus.

**Table 5: Anatomical Site of distribution in Carcinoma Esophagus**

Anatomical Sites	No of patients (n)	Percentage (%)
Upper	15	5.9
Middle	102	40.0
Lower	138	54.1
Total	255	100.0

**Table 6: Distribution of Histopathological Examination (HPE) in Carcinoma Esophagus**

HPE	No of patients (n)	Percentage (%)
Adenocarcinoma	31	12.15
Squamous cell carcinoma	220	86.27
Adenosquamous Carcinoma	1	0.39
GIST	1	0.39
Anaplastic small cell Carcinoma	1	0.39
Sarcoma	1	0.39
Total	255	100.00

Histopathological Examination (HPE) of the patients suffering with in Carcinoma of Esophagus have been examined and reported in table 5. Squamous cell carcinoma and adenocarcinoma were reported in two hundred twenty (86.27%) and thirteen one patients (12.15%) among the total number of patents of esophageal carcinoma. Simultaneously one patient was found to belong to adenosquamous,GIST,anaplastic small cell carcinoma and sarcoma.

#### Discussion

Esophageal cancer is mostly prevalent in developing and underdeveloped countries. Carcinoma of esophageal affects upper digestive tract. Prevalence in females is increasing slowly but mostly common to males [6]. In the present study, we observed a male preponderance with a male to female ratio of 1.07:1 with 27.45% cases in the age group of 61-70 years. This indicates a male predilection for the disease.Symptomatic studies showeddysphagia as a common symptom and experienced by 230(90.20%) patients. This was followed by vomiting which was recorded in two hundred four patients (80.00%).Various studies done in the past have found the lower one third of esophagus to be the most common site for malignant tumors.In the present study of the total cases 54.1 % of malignant tumors were found in the lower 1/3<sup>rd</sup> of the esophagus.Cherian *et. al.* in his study reported that the most common histological subtype of esophageal cancer in Tamil Nadu India was Squamous cell carcinoma with 92% patients diagnosed with it. Esophageal Adenocarcinoma was reported in only 8% patients in his study. He also observed that esophageal squamous cell carcinoma (SCC) was the commonest in the lower 1/3. The recent increase in esophageal adenocarcinoma was attributed to increase in erosive reflux diseases [7]. Literature reveals esophageal SCC was predominant worldwide whereas there has been an increase in esophageal adenocarcinoma in UK,USA, and countries of western Europe [8]. Present Study was consistent with the studies reported by the above-

mentioned authors. We found esophageal SCC as the most common type of histological subtype present in 86.27% patients while adenocarcinoma was reported in only in 12.15% patients. Uncommon histological sub types reported where adenosquamous carcinoma, GIST, sarcoma and anaplastic small cell carcinoma in 0.39% patients each.Our research hospital, Tertiary Care Centre is located in rural area; majority of patients belongs to remote areas. Patients from this area are habitat of smoking, chewing tobacco, and generally used to ingest alcohol on regular basis. Smoking is a general causative factor for abnormal cell growth.

Epidemiological studies confined that environmental factors and lifestyle played an important role in prevalence of cancer and More than 90% of cases were caused due to lifestyle and regular diet [9]. General habits like tobacco, alcohol consumption, and dietary habits were found to be major risk factor. Indians have been known to smoke, chew, and snuff tobacco from long decades ago [10].The present study reveals that peoples specially belonging to remote areas are not cautious due to lack of education and low income.

#### Conclusion

The risk of esophageal carcinoma is increasing in India, as per the data collected in hospital, but sufficient data is not available. Data studied in this article like, study of symptoms, involvement of part of esophagus, and histological examinations will help in specific treatment to control the growth and relieve symptoms. The subjected research may provide drive to precede next step in research planning. This may help in understanding early detection of disease and to take necessary measure in advance. Data regarding etiological findings may help to identify the possible target and to increase public awareness in order to reduce burden of incidence of disease.

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