Research Article

Study on Socio-Demographic and Associated Risk Factors for Oesophageal Cancer in Karnataka Institute of Medical Sciences Hospital, Hubli, Karnataka

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Abstract: Over 20 million people living with cancer all over the world today. The number of new cases is expected to increase from 10 million in 2000 to 15 million in 2020. Cancer has now become the 3rd leading cause of death in South East Asia region. Cancer of esophagus is common in India and has been reportedly increasing in the southern states like Karnataka, Kerala and Tamilnadu. An effort has been made in this regard to study the socio-demographic profile and associated risk factors amongst the patients admitted to the KIMS hospital, Hubli, karnataka. The objectives were to study the socio-demographic profile of patients, to study the various risk factors associated with esophageal cancer and to study the morbidity pattern of esophageal cancer. A cross-sectional study was done among 50 patients admitted in KIMS, Hubli, in the period between September 2011 and November 2011 by a pre-structured and pre-tested questionnaire and the data obtained was analysed. The study showed that, 80% of esophageal cancer was found among males and in the age group of 41-60yrs. 68% belonged to low socio-economic group and 60% were illiterates. Association of smoking, 56% cases, was found to be statistically significant. Others being tobacco chewing (52%) and alcohol (64%). The prevalence of esophageal cancer was found to be higher amongst males, who were illiterates and of low socio-economic strata. Lack of awareness of risk factors and screening modalities were clearly seen. Hence, a comprehensive effort is needed to generate awareness and screening options to cut down the prevalence.
Keywords: esophageal cancer, smoking, tobacco chewing

INTRODUCTION

"CANCER…. An enigma to the medical fraternity and a challenge to dedicated research the world over". The word 'cancer' which terrifies the human soul was initially coined by Hippocrates. It is not a single disease but a group of various forms of diseases having an individual set of symptoms and signs and high morbidity and mortality [4-5-6].Cancer is currently the cause of 12% of all deaths worldwide, in approximately 20 years' time the number of cancer deaths annually will increase from 6 million to 10 million [1]. There are over 20 million people living with cancer all over the world today. The expected number of new cases each year is expected to increase from 10 million in 2000 to 15 million in 2020. Some 60% of all these cases will occur in the less developed countries [10].Cancer has now become 3rd leading cause of death in south east asia [2].

Cancer of esophagus is common in India and has been reported increasingly in the southern states like Karnataka, Kerala, Tamilnadu and others like Assam and Kashmir [12-14]. Nutritional component in diet seems to influence initiation and promotion of malignant growth. Our daily diet may serve as a source of direct or indirect carcinogen. About 15% of esophageal cancer can be linked to a diet poor in fruits and vegetables [8]. Commonly used fresh and sun-dried vegetables and chilies also have a high content of nitrates and nitrogen ions and may be associated with higher rate of esophageal cancer [9].

The use of tobacco products including cigarette, cigar, chewing tobacco is a major risk factor for esophageal cancer. The longer person uses tobacco, the

higher the cancer risk. The risk of esophageal cancer is doubled in smokers of a pack or more a day [7].

A study done in Jabalpur shows that prevalence of cancer esophagus in Jabalpur was 9.94% and it was among top 3 cancers requiring admissions in males [3]. A study done in Coimbatore on risk factors of cancer esophagus revealed that risk was 3.5 times higher with alcohol consumption, 2.5 times higher for tobacco users, 2.8 times higher for betel nut chewers and smokers [15]. This calls for an extensive researches, studies, epidemiological investigations on esophageal cancer to know its etiological factors, distribution, mortality, morbidity and treatment.

An effort has been made in this regard to study the soci-demographic profile and associated risk factors of esophageal cancer cases admitted and getting treated for the same in KIMS Hospital, Hubli, which is a government institute situated in north of Karnataka.

MATERIALS AND METHODS

A cross-sectional study of socio-demographic profile and some associated risk factors among the esophageal cancer patients admitted in KIMS Hospital, Hubli was undertaken. A convenient sample of 50 patients having esophageal cancer were randomly selected in the study from September 2011 to November 2011. Unconfirmed cases by histopathology were excluded from the study. The patients who attended only OPD were excluded. Those admitted more than once during the study period were counted only once.

Data was collected by an interview after an informed consent using a pre-structured and pre-tested questionnaire. The data so collected was fed into a computer. Statistical analysis was done using epi-info and SPSS software. Z-test and x^2 *test* were used to verify statistical significance of the associations. P value of <0.05 were considered statistically significant.

RESULTS

Majority 80% of the affected patients in the study were males and in the age group of 41-60 years and belonged to Hindu religion. 60% were illiterates with only 26% completing the primary school education and 68% belonged to the labor class, as shown in the table 1.

Table 1: Socio-demographic details

Sl. No.	Variable	Group	Male	%	Female	%	Total	%
1	Age	30-40	8	16	1	2	9	18
		41-50	12	24	3	6	15	30
		51-60	16	32	6	12	22	44
		>60	4	8	0	0	4	4
		Total	40	80	10	20	50	100
2	Religion	Hindu	32	64	8	16	40	80
		Muslim	8	16	1	2	9	18
		Christian	0	0	0	0	0	0
		others	1	2	0	0	1	2
		Total	40	80	10	20	50	100
3	Education	Illiterate	25	50	5	10	30	60
		Primary	11	22	2	4	13	26
		High school	3	6	3	6	6	12
		Degree	1	2	0	0	1	2
		Total	40	80	10	20	50	100
4	Occupation	Labour	30	60	4	8	34	68
		Private work	2	4	0	0	2	4
		Businessman	2	4	0	0	2	4
		Govt. employee	1	2	0	0	1	2
		Others	5	10	6	12	11	22
		Total	40	80	10	20	50	100

Table 2: Place of diagnosis

Place	Number	Percentage (%)
PHC	0	0
Cancer hospital	10	20
District hospital	12	24
Medical college hospital	26	52
Others	2	4
Total	50	100

Majority of cases 52% were diagnosed in medical college hospital and 0% in PHC, table 2.

Table 3: According to habits

Sl .No.	Habit		No. of cases	Percentage (%)	Test of significance
1.	Smoking	Yes	28	56	*Z=7.977 at* p<0.001 is highly significant
		No	22	44	
		Beedi	25	50	
		Cigarette	1	2	
		Both	2	4	
		Total	28	56	
2.	Duration of smoking	<5 years	8	29	
		5-10 years	6	21	
		>10 years	14	50	
		Total	28	100	
3.	Tobacco/ Betel nut/Gutkha	Yes	26	52	$x^2=2.42$ *at* p>0.05 not significant
		No	24	48	
		Total	50	100	
4.	Duration	<1 year	4	15	
		1-5 years	7	27	
		5-10 years	9	35	
		>10 years	6	23	
		Total	26	100	
5.	Alcohol intake	Yes	32	64	Z=9.42 at P<0.001 is highly significant
		No	18	36	
		total	50	100	
6.	Duration	5-10 years	6	19	
		>10 years	26	81	
		Total	32	100	
7.	Consumption of hard roti	Yes	28	56	Z=7.977 at P<0.001 is significant
		No	22	44	
		Total	50	100	
8.	Consumption of pickle/spicy food	Yes	23	46	Z=6.534 at P<0.001 is significant
		No	27	54	
		Total	50	100	

56% of the cases were smokers and out of these 21% were smoking for more than 5 years. This was found to be statistically significant. 52% were having the habit of tobacco chewing and 35% were chewing for more than 5 years, this was not found to be statistically significant. 64% had alcohol consumption and 81% were consuming for more than 10 years. Alcohol consumption was statistically highly significant. 56% were consuming hard roti and 46% were eating spicy food, both being statistically significant from table 3.

Table 4: Awareness about follow-up

Coming for regular follow-up	Male	Female	Total
Yes	22(44%)	6(12%)	28(56%)
No	18(36%)	4(8%)	22(44%)
Total	40(80%)	10(20%)	50(100%)

56% were coming for regular follow-up and 44% were not attending regular follow-ups.

DISCUSSION

In the present study, out of 50 esophageal cancer patients, 80% were males and 20% were females and majority of them were in age group of 41-60 years. This is in accordance with the study done in Coimbatore on risk factors of esophageal cancer [15]. A similar study done on prevalence of head and neck cancer in Assam shows the commonest age group was in 6th decade [13]. Another study done in Kashmir showed that esophageal cancer is common in 5th decade and in general distribution males cases were more than female [11].

Majority, 68% were doing labor work, this shows high prevalence in low socio-economic group. 60% were illiterates and 22% had completed primary schooling. 40% belonged to Hindu religion, this is again in accordance with the study in Coimbatore, which showed 76% of prevalence of esophageal cancer among illiterates and 92% Hindu patients [15].

52% of cases were diagnosed in medical college hospital and none in PHC's, this shows that awareness and treatment of cancer is not available at PHC's.

In our study, it was found that 56% of cases were smokers and out of these 72% were smoking for more than 5 years which was statistically significant. This is similar to a study on risk factors of esophageal cancer in Trivandrum, which revealed that an adjusted relative risk of 2.03 among beedi /cigarette smokers [12]. And the study done in Coimbatore also revealed the presence of 2.8 and 2.5 fold increase in risk among smokers and tobacco chewers respectively [15].

In the present study 52% were having the habit of tobacco intake and out of this 57.6% were taking it for more than 5 years. It was not statistically significant. This was not in accord with the study done in Kerala, which revealed the relative risk of 2.03 among tobacco chewers [12]. A study in Coimbatore shows 30% were tobacco chewers and 38% were betel nut chewers [15].

The present study showed that, 64% were consuming alcohol and out of these 81% were taking it for more than 10 years. This was statistically highly significant. A study done in Trivandrum showed an adjusted relative risk of 2.33 among alcoholics [12]. The study done in Coimbatore revealed that 50% patients were alcoholics with relative risk of 3.5 [15]. A study done in Kashmir also showed an high risk of esophageal and gastric cancer with relative risk of 7.5 [11].

In the present study 56% were found consuming hard roti and 46% were consuming pickle and spicy food frequently in their diet which was statistically significant showing strong association between consumption of pickle and spicy food with esophageal cancer. Similarly a study done in Coimbatore had 75% patients consuming pickle and spicy food with relative

risk of 2.5 [15]. A study done in Bangalore also had similar results with 57.7% patients consuming spicy food [8].

Our study suggests an association of cancer esophagus with smoking, alcohol, tobacco chewing and consumption of hard roti frequently among this part of north Karnataka, which is similar to reports from other parts of the country and the world.

INTERPRETATION AND CONCLUSION

The present study revealed that majority of esophageal cancer patients are males of 41-60 years age group belonging to labor class. They are illiterates or had completed primary schooling and majority of them being smokers and alcoholics and had a habit of tobacco chewing for more than 5 years. Most of them had habit of consuming hard roti, pickle/spicy food in their diet daily. The prevalence of esophageal cancer in our hospital is found to be higher than other studies. As the study sample was small. This study hopes to quantify and analyze the spectrum of esophageal cancer and should help as a starting point for a population based study in this region. A comprehensive effort and a larger study is needed to identify the cause of high prevalence and to generate awareness, screening and treatment options suited to meet this challenge in this part of north Karnataka.

REFERENCES

1. WHO; National cancer control programme policies and managerial guidelines. 2nd edition, Geneva, 2002.
2. WHO; World Health Report, 2001, Geneva, 2002.
3. Sinha A, Kasar PK, Sharma A, Jadhav TR et al.; Cancer morbidity and mortality profile in Jabalpur-a hospital based study. IJCM, 2006; 31
4. Kandekar SP, Bagdey PS, Tiwari RR .Oral cancer and some epidemiological factors: A hospital based study. Indian J. Community Med. 2006; 31: 157-159.
5. WHO technical report series 632.cancer statistics, 1979.
6. WHO technical committee report series 568, smoking and its effect on health. 1974.
7. Chandrasekhar U and Paul et al nutrition supplementation studies on selected cancer patients. Indian journal of nutritional diet, 1989;26:219-227.
8. G.Asha, D.Vijayalakshmi et al relation between risk factors and dietary intake of esophageal cancer patients journal of human ecology, 2005; 17(1):39-42.
9. Indian council of medical research, Biennial report 1988-89. National cancer registry programme ICMR, New Delhi 1992.
10. Ansari.M.M Haleem.S, Beg M H. clinicopathological profile of carcinoma esophagus at Aligarh. Indian journal of Indian med association.1991;89:217-9

11. Khuroo M S, Zargar S A, Mahajan R, Banday M A. High incidence of esophageal and gastric cancer in Kashmir in a population with special reference to personal and dietary habits. Gut, 1992;33:11-5

12. Shankarnarayana R, Duffy S W, Padmakumary G et al. Risk factors of cancer of esophagus in kerala. Indian journal of cancer 1991;49:485-9

13. Phukan R K, Ali MS, Chetia CK, Mahanta J; Betel nut and tobacco chewing potential risk factors of cancer of esophagus in Assam. Br J Cancer, 2001; 85: 661-667.

14. Hu J, Nyren O, Walk A, Bergstrom A, Yuan J, Adami HO; Risk factors for esophageal cancer in North East China. International Journal of Cancer, 1994; 57: 38-46.

15. Chitra S, Ashok L, Anand I, Srinivas V, Jayanthi V; Risk factors for esophageal cancer in Coimbatore, Southern India. A hospital based case control study. Indian Journal of Gastroenterology, 2004; 23: 19-21.