



THE STUDY OF OVERVIEW OF ETIOLOGICAL FACTORS FOR SQUAMOUS CELL AND ADENOCARCINOMA OF OESOPHAGUS WITH REFERENCE TO BLOOD GROUPS

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KEYWORDS :

INTRODUCTION

Esophageal cancer (EC) is the 8th most common incident cancer in the world and because of its high fatality rate, ranks 6th among all cancers in mortality. It is not surprising, therefore, that the etiology of EC has been investigated for over a century. Based on clinical observations, Craver in 1932 and Watson in 1939 list excessive use of alcohol and tobacco, low socioeconomic status, poor oral health, and consumption of hot drinks as risk factors for EC.

In India, Pakistan and Srilanka the high incidence of esophageal Carcinoma has been linked with chewing of tobacco with or without betel nut and leaf stalked lime.

The American Cancer Society's estimates for esophageal cancer in the United States for 2015 are:

- About 16,980 new esophageal cancer cases diagnosed (13,570 in men and 3,410 in women)
- About 15,590 deaths from esophageal cancer (12,600 in men and 2,990 in women)

This disease is 3 to 4 times more common among men than among women. The lifetime risk of esophageal cancer in the United States is about 1 in 125 in men and about 1 in 435 in women. (See the next section for risk factors that can affect these chances.)

Esophageal cancer makes up about 1% of all cancers diagnosed in the United States, but it is much more common in some other parts of the world, such as Iran, northern China, India, and southern Africa. The main type of esophageal cancer in these areas is squamous cell carcinoma.

According to Indian Council of Medical Research (ICMR) data on site specific cancer burden, in males, the most common are cancers of mouth/pharynx, esophagus, stomach, lung/bronchi while as in females, the common cancers are cervix, breast, mouth/oropharynx and esophagus.

The major three cancers contributing were stomach cancers (19.8%), esophagus (18.6%) and colon cancers (14.2%). Esophageal cancers are reported maximum from South India (Karnataka, Tamil Nadu) and also from states of Maharashtra, Gujarat, Jammu & Kashmir and parts of Northeastern states. Age adjusted incidence of esophageal cancers in females in Bangalore is one of the highest in the world (8.3/100,000).

key statistics about cancer of the esophagus

The American Cancer Society's estimates for esophageal cancer in the United States for 2015 are:

- ❖ About 16,980 new esophageal cancer cases diagnosed (13,570 in men and 3,410 in women)
- ❖ About 15,590 deaths from esophageal cancer (12,600 in men and 2,990 in women)
- ❖ This disease is 3 to 4 times more common among men than among women.
- ❖ The lifetime risk of esophageal cancer in the United States is about 1 in 125 in men and about 1 in 435 in women.
- ❖ Squamous cell carcinoma is the most common type of cancer of the esophagus among African Americans, while adenocarcinoma is more common in whites.

AIMS AND OBJECTIVES

- To find out and compare the etiological factors of squamous cell and Adenocarcinoma of oesophagus with special reference to blood groups in 50 patients visiting Department of Medicine, RNT Medical College Udaipur.

SPECIFIC OBJECTIVES:-

1. To find out and to confirm the patients of squamous cell and adenocarcinoma of oesophagus with endoscopic biopsy and histopathological examination.
2. To conduct the survey of etiological factors in the patients of squamous cell and adenocarcinoma of oesophagus
3. To find out the possible relation of blood groups with different histological subtypes of oesophageal cancer (Squamous cell carcinoma & Adenocarcinoma)

REVIEW OF LITERATURE

Khan NA1, Teli MA (2011) et.al. conducted a survey of risk factors in carcinoma esophagus in the valley of Kashmir, Northern India the aim of this study was to determine the role of diet and other life-style related factors in the etiology of cancer of esophagus. A total of 100 confirmed squamous cell carcinoma of esophagus patients were enrolled for the study (Group A). 100 healthy subjects were included as controls (Group B). A predesigned questionnaire dealing with the basic patient data, dietary and smoking habits etc. was distributed among the cases in both groups. The result of this was stated that Group A patients included 71 males and 29 females in the age range of 40-70 years. Majority 37% were farmers, 29% house wives. Of the 72% smokers, 66% smoked hookah. 29% had positive family history. More than 90% took salt-tea at breakfast. Meat consumption was low, 44% took it weekly and 42% on monthly basis. 69% took fish yearly. Group B included 75 males and 25 females of which 35.7% were hookah smokers. The study concluded that Poor socio-economic status resulting in fewer intakes of fresh fruits, vegetables and fish in addition to heavy hookah smoking are suspected to be the major risk factors for the development of esophageal cancer.

Acta Cir, Bras et al (2014) conducted study To analyze the epidemiological features of patients with esophageal cancer according to the histopathological types: squamous cell carcinoma or adenocarcinoma. A total of 100 patients with esophageal cancer, being 50 squamous cell carcinomas and 50 adenocarcinomas were analyzed for demographics, nutritional factors, lifestyle habits, benign pathological conditions associated, like Barrett's esophagus and megaesophagus, tumor stage and survival rates. The nutritional factors evaluated included body mass index, percent weight loss, hemoglobin and albumin serum levels. the result shows that Esophageal cancer occurred more often in men over 50 years-old in both histological groups. Squamous cell carcinoma was significantly more frequent in blacks than adenocarcinoma. Alcohol consumption and smoking were significantly associated with squamous cell carcinoma. Higher values of body mass index were seen in patients with adenocarcinoma. Barrett's esophagus was found in nine patients (18%) with adenocarcinoma, and megaesophagus in two patients (4%) with squamous cell carcinoma. The majority of patients were on stages III and IV in both histological groups. The mean survival rates were 7.7 ± 9.5 months for patients with squamous cell carcinoma and 8.0 ± 10.9 months for

patients with adenocarcinoma. The study concluded that Epidemiological features are distinct for the histopathological types of esophageal cancer. Squamous cell carcinoma is associated with black race, alcohol and smoking, while adenocarcinoma is related to higher body mass index, white race and Barrett's esophagus.

MATERIALS AND METHODS

STUDY AREA:

The study will be conducted in R.N.T. Medical College and Associated Groups of ospitals of UDAIPUR in (SOUTHERN RAJASTHAN). This study was involvement of the Department of pathology, General Surgery and General Medicine for patient selection and also Departments of Biochemistry and Radiology of R.N.T. Medical College & Hospital, for the necessary laboratory tests and investigation data.

STUDY POPULATION

All the patient admitted in In –patient department for their complain of dysphagia to the department of General medicine, General Surgery, Oncology & ENT.

STUDY PERIOD:

All the patients needed for the study was selected within a specified period of one year from November 2014 to December 2015.

SAMPLE SIZE:

A total number of 50 patients Diagnosed as cases of squamous cell and adenocarcinoma of esophagus was taken during this time period for this study.

SAMPLE DESIGN:

The sample of patients will be studied as 50 patients having squamous cell and adenocarcinoma according to endoscopic, biopsy and its histopathological report.

INCLUSION CRITERIA:

All the patient complaining of dysphagia presented to OPD, IPD of all the age groups, both sexes and various occupation's suggested to endoscopic examination and biopsy of suspected esophageal lesion.

EXCLUSION CRITERIA:

1. Where multiple concurrent tumors were found on CT scan in other parts of GIT.
2. Patients who were bound to be lost in follow up
3. Patients insisting on having treatment from abroad.
4. pregnancy

STUDY DESIGN:

The study will be an Institution based comparative observational cross sectional study.

STUDY TECHNIQUES:

METHODS OF COLLECTION OF DATA:

- a. Patients data collection and evaluation
 - Patient data will be collected from all patients attending government hospital General ward , OPD, causality and inpatient department, irrespective of their age, gender, back ground, socio economic status. The patients was evaluated and followed up according to protocol.
 - Detailed history of patient was enquired and entered in proforma.
 - Complete haemogram, blood urea, serum creatinine, serum electrolyte was send and results obtained.
 - Preliminary x-ray chest, and abdominal ultrasound was done.
 - Preliminary upper GI endoscopy and biopsy was taken and sent for histopathological examination.
 - Patient was be put on conservative line of management.

Patient data collected regarding:

Age, gender, complaints, past surgical history, past history of

esophageal tumor, history of GERD, history of alcoholism or cigarette smoking, patient will be examined in detail. If the patient is referred from elsewhere the details of the same will be considered at the time of admission. Blood investigation and x-ray chest, abdominal ultrasound, endoscopy and histopathological examination of endoscopic biopsy performed will be added. Complication if developed will be evaluated in details and managed according and further complication will be followed up.

Follow up of patients:

- After discharge from hospital Patients will be followed up for a period of six months on a monthly basis, for possible recurrence.

PARAMETERS TO BE STUDIED:

Parameters to studied are-

- a) UPPER GI ENDOSCOPY
- b) BIOPSY FOR HISTOPATHOLOGIC STUDY
- c) Patient's dietary profile \
- d) Patient's blood groups

STUDY TOOLS:

Fiber optic video endoscope, biopsy forceps slides, Microscope, sample collection set, Computer for Data Analysis, Reagents and Tubes for Blood Glucose Estimation, Trop T etc. Formalin:specimen vial, pulse oximeter.

NAME				
AGE/ SEX				
Wt /Ht ,OBESITY – BMI				
URBAN/RURAL				
LITRACY	Illiterate	< 10th class	10 -12th class	Graduate and above
HISTOPATHOLOGY	SCC	ADENO	Others	
TOBACCO	Form-chewing/ smoking / both/Snipping/ Brushing	Duration	Quantity	
ALCOHOL		Duration	Quantity	
SOCIO ECONOMIC STATUS	Occupation	Income		
GERD	Severity	Frequncy	Duration	
PLUMMER VINSON SYNDROME	Yes/no			
CAUSTIC INJURY	Yes/no			
ACAHALSIA	Yes/no			
PREVIOS H/O OF MALIGNANCY	Yes/no			
PREVIOS H/O RADIOTHERAPY	Yes/no			
PRESENTATION	Dysphagia yes/no	Grade		
	Wt loss yes/no	Grade		
	Odynophagia yes/no			
	Retrostrenal pain yes/no			
	Other symptoms			
BLOOD GROUP	A			
	B			
	AB			
	O			

LABORATORY INVESTIGATIONS:

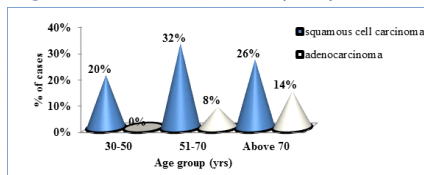
Blood: Hbgm %;
 ESR:.....mm/1st hr,
 TLC:...../cu.mm;
 DLC: N: % L: % M: % E: % B: %
 Blood Glucose (mg/dl): randommg/dl
 Serum Urea:mg/dl;
 Serum Creatinine:mg/dl;
 Serum uric Acid:mg/dl;
 HIV/.....HBsAg.....
 LFT.....serum bilirubin (.....),SGOT(.....),SGPT (.....)Serum ALP.....TP.
 Serum albumin.....
 Endoscopy.....
 Histopathology.....

**Any relevant data:-
OBSERVATION**

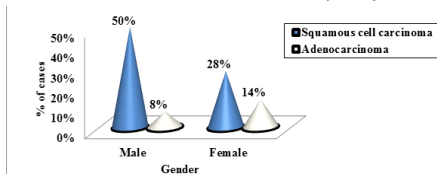
The present study constitute 50 patient with carcinoma of oesophagus who met inclusion criteria. They were selected from the patients admitted in medical wards and cancer unit of M.B.G.H., Udaipur attached to R.N.T. Medical College, Udaipur, Rajasthan.

The following tables highlights the pertinent observation.

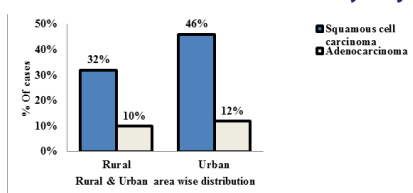
Graph-1 Age wise distribution of study subjects



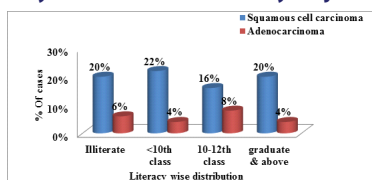
Graph-2 Gender wise distribution of study subjects



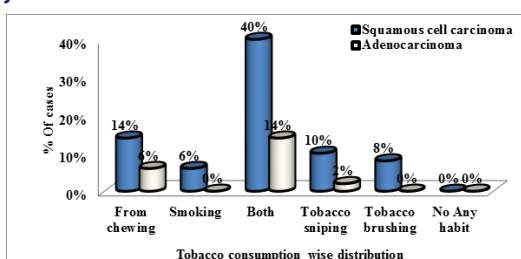
Graph-3 Rural/ Urban wise distribution of study subjects



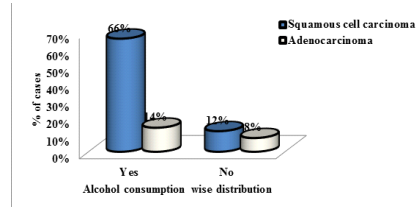
Graph-4 Literacy wise distribution of study subject



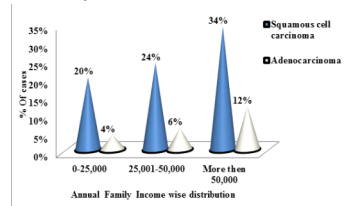
Graph-5 Tobacco consumption wise distribution of study subject



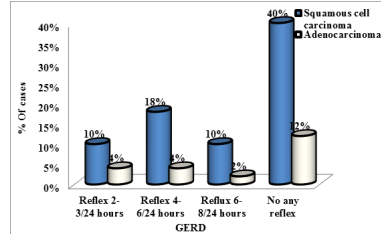
Graph- 6 Alcohol consumption wise distribution of study subject



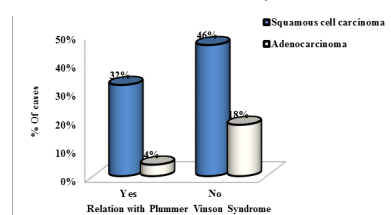
Graph-7 Annual family income wise distribution



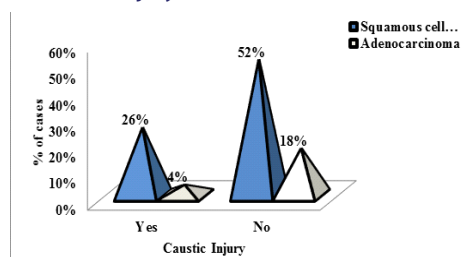
Graph-8 GERD



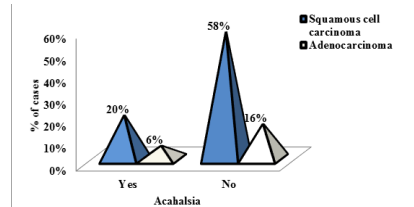
Graph-09 Relation with Plummer Vinson Syndrome



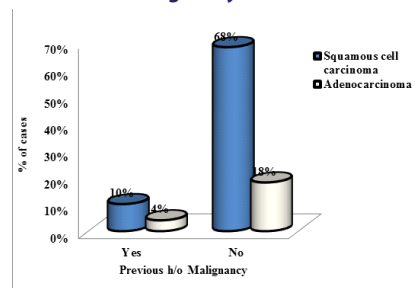
Graph-10 Caustic injury



Graph-11 Acahalsia



Graph-12 Previous h/o malignancy



Graph-13 Previous h/o radiotherapy

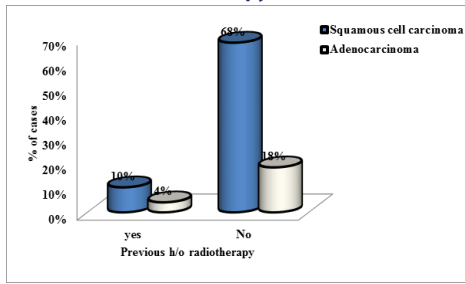


Table-14 Clinical Presentation

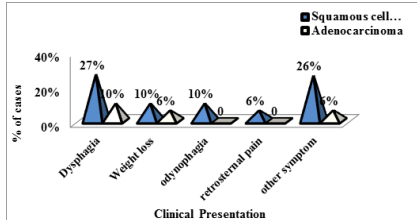


Table-15 Blood Group Wise distribution

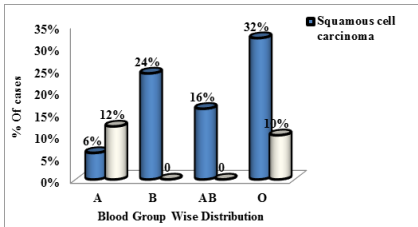


Table 16 Comparative data of etiological factors of Squamous cell and Adenocarcinoma

S.No		Squamous cell Carcinoma	Adeno carcinoma	P value
1.	Age (years)			
	30-50	10 (20%)	0	<0.05 Significant
	51-70	16 (32%)	04 (8%)	
Above 70	13 (26%)	07 (14%)		
2.	Gender			<0.05 Significant
	Male	25 (50%)	04 (8%)	
	Female	14 (28%)	07 (14%)	
3.	Rural/ Urban Area			>0.05 Not significant
	Rural	16 (32%)	05 (10%)	
	Urban	23 (46%)	06 (12%)	
4.	Literacy level			>0.05 Not significant
	Illiterate	10 (20%)	3 (6%)	
	<10th class	11 (22%)	2 (4%)	
	10-12th class	8 (16%)	4 (8%)	
	Graduate and above	10 (20%)	2(4%)	
5.	Tobacco consumption			<0.05 Significant
	Tobacco chewing	07 (14%)	03 (6%)	
	Smoking	03(6%)	0	
	Both	20 (40%)	07 (14%)	
	Tobacco sniping	05 (10%)	01 (02%)	
	Tobacco brushing	04 (08%)	0	
	No Any habit	0	0	
6.	Alcohol consumption			<0.05 Significant
	Yes	33 (66%)	07 (14%)	
	No	06 (12%)	04 (8%)	
7.	Annual Family Income			>0.05 Not significant
	0-25,000	10 (20%)	2 (4%)	

	0-25,000	10 (20%)	2 (4%)	>0.05
	25,001-50,000	12 (24%)	3 (6%)	Not significant
	More then 50,000	17 (34%)	6 (12%)	
8.	GERD			
	Reflex 2-3/24 hours	5(10%)	2(4%)	>0.05 Not significant
	Reflex 4-6/24 hours	9 (18%)	2 (4%)	
	Reflex 6-8/24 hours	5 (10%)	1 (2%)	
	No any reflex	20 (40%)	6(12%)	
	No	11 (36.7%)	5(16.7)	
9.	Relation with Plummer Vinson Syndrome			
	Yes	16(32%)	2 (4%)	>0.05 Not significant
No	23 (46%)	9 (18%)		
10.	Caustic Injury			
	Yes	13 (26%)	2 (4%)	>0.05 Not significant
No	26 (52%)	09 (18%)		
11.	Achalsia			
	Yes	10 (20%)	3 (6%)	>0.05 Not significant
No	29 (58%)	8 (16%)		
12.	Previous h/o malignancy			
	Yes	5 (10%)	2 (4%)	>0.05 Not significant
No	34 (68%)	9 (18%)		
13.	Previous h/o radiotherapy			
	Yes	5(10%)	2 (4%)	>0.05 Not significant
No	34 (68%)	9 (18%)		
14.	Clinical Presentation			
	Dysphagia	13 (26%)	5 (10%)	<0.05 Significant
	Weight loss	5 (10%)	3 (6%)	
	Odynophagia	5(10%)	0	
	Retrosternal pain	3(6%)	0	
	Other symptoms	13 (26%)	3(6%)	
15.	Blood Groups			
	A	3 (6%)	6(12%)	>0.05 Not significant
	B	12 (24%)	0	
	AB	8 (16%)	0	
	O	16(32%)	5 (10%)	

ABBREVIATIONS USED IN MASTER SHEET

1.	Age	=1
	a. 30-50	=2
	b. 51-70	=3
	c. Above 70	
2.	Gender	=1
	a. Male	=2
	b. Female	
3.	Rural/Urban	=1
	a. Rural	=2
	b. Urban	
4.	Literacy	=1
	a. Illiterate	=2
	b. <10th class	=3
	c. 10th -12th class	=4
	d. Graduate and above	
5.	Tobacco	=1
	a. Tobacco chewing	=2
	b. Smoking	=3
	c. Both	=4
	d. Tobacco sniping	=5
	e. Tobacco brushing	=6
	f. No any habit	

6.	Alcohol consumption	=1
	a. Yes	=2
	b. No	
7.	Annual family income	=1
	a. 0-25,000	=2
	b. 25,001-50,000	=3
	c. More then 50,000	
8.	GERD	=1
	a. Reflex 2-3/24hours	=2
	b. Reflex 4-6/24hours	=3
	c. Reflex 6-8/24 hours	=5
	d. No any reflex	
9.	Plummer Vinson syndrome	=1
	a. Yes	=2
	b. No	
10.	Caustic injury	=1
	a. Yes	=2
	b. No	
11.	Achalsia	=1
	a. Yes	=2
	b. No	
12.	Previos h/o malignancy	=1
	a. Yes	=2
	b. No	
13.	Previous h/o radiotherapy	=1
	a. Yes	=2
	b. No	
14.	Clinical presentation	=1
	a. Dysphagia	=2
	b. Weight loss	=3
	c. Odynophagia	=4
	d. Retrosternal pain	=5
	e. Other symptoms	
15.	Blood group	=1
	a. A	=2
	b. B	=3
	c. AB	=4
	d. O	

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