

**A STUDY ON PREVALENCE AND RISK FACTORS ASSOCIATED REFLUX  
ESOPHAGITIS, HIATUS HERNIA, CARCINOMA ESOPHAGUS IN ENDOSCOPY CLINIC IN  
RMMCH, ANNAMALAI NAGAR, INDIA- A PROSPECTIVE, ENDOSCOPY BASED STUDY**

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**ABSTRACT**

**Objective:** To determine the prevalence of and risk factors for Reflux esophagitis, Hiatus Hernia, Carcinoma Esophagus amongst patients undergoing upper gastrointestinal endoscopic examination in RMMCH, Prospective study among 200 cases. **Design:** A cross-sectional study on consecutive patients with various symptoms undergoing upper gastrointestinal endoscopy. **Setting:** A large tertiary care hospital in rural India in Chidambaram taluk, Cuddalore district, India. **Materials & methods:** 200 consecutive patients undergoing UGI Endoscopy under our unit for upper abdominal discomfort were examined for the presence of reflux oesophagitis, hiatus hernia and Carcinoma Esophagus. The diagnosis and classification of reflux esophagitis was based on the Los Angeles classification. Patients with predominant symptoms of heartburn, dysphagia, acid regurgitation, loss of appetite. The prevalence of reflux esophagitis, hiatus hernia, carcinoma esophagus were analysed in relation to age, gender, socioeconomic status, symptomatology in addition to Endoscopic presence of Reflux esophagitis, hiatus hernia, carcinoma esophagus. **Results:** Of the total 200 patients, 62.5% are men, 37.5% are women. 75% of them had esophageal diseases, 25% had normal study. Majority of people (59.5%) belong to age group of 26-50 years. In people with esophageal diseases, Reflux esophagitis is seen in 41.3% of people, Hiatus hernia seen in 26.6% persons, Carcinoma esophagus is seen in 4% of the population. Among them 45% are smokers, alcohol abuse is seen among 38% population. 26% of them had history of taking spicy food, 17% had habit of taking smokeless tobacco. High incidence of Reflux esophagitis is attributed to high number of persons with smoking habits, alcoholism and dietary habits. **Conclusions:** Reflux oesophagitis and Hiatus Hernia were not as uncommon as previously thought in the rural population and a significant proportion of our patients had severe grades of reflux oesophagitis. Hiatus hernia incidence is also increasing because of the widespread awareness for early medical treatment and availability of UGI Endoscopy at many locations. UGI Endoscopy hence was being considered a vital diagnostic tool in a general surgeon's armamentarium.

**Keywords:** Esophagitis, Hiatus Hernia, Carcinoma Esophagus

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**1. INTRODUCTION**

The advent of endoscopy has been revolutionary in the diagnosis of benign and malignant esophageal diseases. This technique allows adequate examination of the entire esophageal mucosa, as well as acquisition of biopsies and resection of focal lesions (Gerson and Riafilopoulos, 2002; Enzinger and Mayer, 2003). In clinical practice, endoscopy has been useful in diagnosing esophagitis, including GERD-related and other causes, monitor persistent lesions such as metaplasia and dysplasia.

The incorporation of biopsies and histological analyses to macroscopic visualization increases the list of differential diagnoses and allows the detection of premalignant lesions in the early stage of development (Hirota and Zuckerman, 2006). The current use of imaging magnification, especially in the detection of non-erosive reflux disease as well as the use of Lugol dye chromoendoscopy to detect precursor lesions of squamous cell carcinoma, constitute important alternatives that can help in the preventive or therapeutic approach (American Society for Gastrointestinal Endoscopy Guidelines for endoscopy, 2000). Endoscopic screening of populations exposed to malignancy risk factors such as

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smoking, tobacco and alcohol should be a priority, since the majority of cancerous lesions in the initial stage do not provide a large symptom spectrum (Ukarpol et al., 2004; Hirota,1999; Zou et al., 2011; Kulig et al., 2004).

**2.MATERIALS AND METHODS**

200 patients who presented with upper gi symptoms for various reasons and underwent Upper GI Endoscopy were evaluated clinically and data recorded in proforma.Biopsies and brush cytology were taken and followed up.

The data collected were analysed in relation to type of esophageal diseases to Age,Gender,SocioEconomic status,Risk Factors,Symptomatology.

In this study we present association of risk factors with Reflux esophagitis, hiatus hernia and carcinoma esophagus.

**3.RESULTS AND DISCUSSION**

**Table .1: Age and Sex distribution**

Age Group In Years	MALE	FEMALE	TOTAL
14 – 25	14 (11.2%)	6 (8%)	20
26 – 50	71 (56.8%)	48 (64%)	119
51-75	38 (30.4%)	18 (24%)	56
>75	2 (1.6%)	3 (4%)	5
<b>Total</b>	125 (100%)	75 (100%)	200

Among total study participants, 62.5 % were males and 37.5 % were females. Highest percentage (~59.5 %) of study participants was in the age group of 26-50 years. Both among males and females, highest percentage were in the age group of 26 – 50 years i.e. 56.8% and 64 % respectively. Among males, 1.6 % were in the age of above 75 years and among females 4 %. This difference was found to be statistically significant.

**Table.2.: Frequency of risk factors of esophageal diseases**

RISK FACTOR	PRESENT	ABSENT
<b>SMOKING</b>	90 (45 %)	110 (55%)
<b>SMOKELESS TOBACCO</b>	34 (17%)	166(83%)
<b>ALCOHOL</b>	76 (38%)	124 (62%)
<b>SPICY FOODS</b>	52(26%)	148(74%)

Among 200 patients, 45 % were smokers and 38 % were alcoholics. History of consumption of smokeless tobacco and spicy food were found in 17 % and 26 % of patients.

<b>REFLUX ESOPHAGITIS</b>	62	41.3 %
<b>HIATUS HERNIA</b>	40	26.6 %
<b>GE JUNCTION INCOMPETENCE(LAX HIATUS)</b>	21	14 %
<b>CARCINOMA</b>	6	4 %

Endoscopic evaluation revealed that 75% of patients had esophageal diseases and Refluxesophagitis (41.3%) was more common followed by Hiatus Hernia(26.6%), GE junction incompetence(LaxHiatus) (14%), Esophageal Candidiasis (4.6%),Varices (4.6%), Carcinoma (4%),

**Table.4:Relation between risk factors and endoscopic findings**

RISK FACTORS	ENDOSCOPIC FINDINGS		P VALUE
	NORMAL	ABNORMAL	
<b>SMO KIN</b>	18 (36%)	72(48%)	0.13
PRESENT	32(64%)	78 (52%)	
ABSENT			
<b>SMOKELESS TOBACCO</b>	17 (34%)	17 (11.3%)	0.002
PRESENT	33 (66%)	133 (88.6%)	
ABSENT			
<b>ALCOHOL</b>	23 (46%)	53 (35.3%)	0.178
PRESENT	27 (54%)	97 (64.7%)	
ABSENT			
<b>SPICY FOODS</b>	26 (52%)	26(17.3%)	0.06
PRESENT	24 (48%)	124 (82.6%)	
ABSENT			

\* Chi square test

H/o smoking was more among abnormal cases (48%) than normal cases(36%) and similarly h/o alcohol was also less among abnormal cases(35.3%) than normal(46%)cases. Whereas,H/o smokeless tobacco was more common among normal cases (34%) compared to abnormal cases (11.3%). Among those taking Spicy foods 52% have normal findings, while 17.3% have esophageal diseases.

**Table 5: Presenting symptoms -reflux /lower end esophagitis**

PRESENTING SYMPTOMS	REFLUX ESOPHAGITIS	
	N =62	PERCENTAGE
DIFFICULTY SWALLOWING	6	9.6
HEARTBURNS	43	69.3
REGURGITATION	7	11.2
CHEST PAIN	5	8.06
LOSS OF APPETITE	0	0
MALENA	1	0.6
HEMATEMESIS	0	0

In patients having refluxor lower end esophagitis , heart burns is the predominant presenting complaint in 69.3% patients, followed by regurgitation in 11.2 %, difficulty swallowing in 9.6%,chest pain in 8.06%.

**Table 6 : Presenting symptoms in hiatus hernia**

PRESENTING SYMPTOMS	HIATUS HERNIA	
	N =40	PERCENTAGE
DIFFICULTY SWALLOWING	36	90 %
HEARTBURNS	23	57.5%
REGURGITATION	33	82.5%
CHEST PAIN	0	0
LOSS OF APPETITE	0	0
MALENA	0	0

In patients with Hiatus hernia (n=40), 90% patients had difficulty in swallowing,82.5% have regurgitation, 57.5% have heartburns as presenting symptoms.

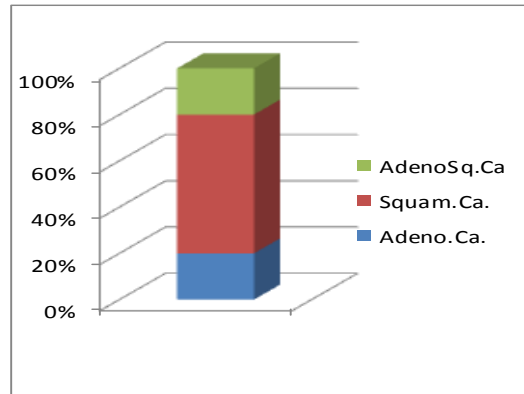
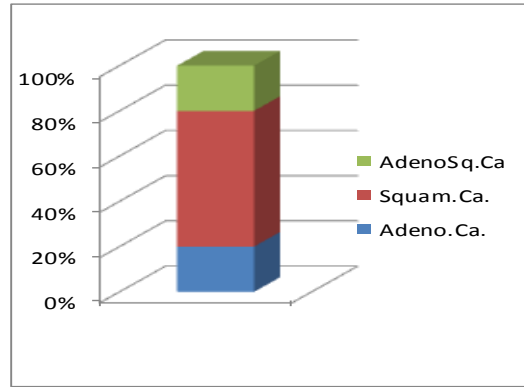
**Table 7 : Carcinoma esophagus**

PRESENTING SYMPTOMS	CARCINOMA ESOPHAGUS	
	<u>N=6</u>	<u>PERCENTAGE</u>
DIFFICULTY SWALLOWING	6	100
HEARTBURNS	2	33.3
REGURGITATION	0	0
CHEST PAIN	0	0
LOSS OF APPETITE	5	83.3
MALENA	2	33.3
HEMATEMESIS	2	33.3

Among 6 patients with suspected lesions in endoscopy, 100% presented with difficulty swallowing, 83.3% presented with loss of appetite and weight, 33.3% each of heartburns, hematemesis and malena.

Hence, dysphagia or difficulty swallowing are statistically significant variables for carcinoma esophagus. Among total, 100% are males.

Among six, Biopsies were taken for all the cases and followed up Pathology report suggests 5 malignancies and 1 nonmalignant or premalignant lesions were found.



**DETAILS:**

Among Carcinoma Esophagus patients, 3 had Squamous Cell Carcinoma, 1 had Adenocarcinoma, 1 had AdenoSquamous Carcinoma.

Reports suggesting predominantly Squamous cell Carcinoma in 60% and Adenocarcinoma and AdenoSquamous type in remainder 40% with 20% each. This trend is more like to the Indian studies, where Squamous cell carcinoma is more common than Adenocarcinoma.

DISEASES	SMOKING			SMOKELESS TOBACCO			ALCOHOL			SPICY FOODS		
	+	-	Total	+	-	Total	+	-	Total	+	-	Total
<b>REFLUX ESOPHAGITIS</b>	23 37.0%	39 62.9%	62	4 6.4%	58 93.6%	62	19 30.6%	43 69.4%	62	9 14.5%	53 85.5%	62
<b>HIATUS HERNIA</b>	21 52.5%	19 47.5%	40	2 5%	38 95%	40	11 27.5%	29 72.5%	40	6 15%	34 85%	40
<b>CARCINOMA</b>	5 83.3%	1 16.7%	6	3 50%	3 50%	6	5 83.3%	1 16.7%	6	3 50%	3 50%	6

#### **RISK FACTOR ANALYSIS : SMOKING**

Smoking has been implicated in many diseases. Among, esophageal diseases association with Esophageal carcinoma has been highest with 83.3% cases. In Hiatus Hernia 52.5%, In Reflux Esophagitis associated with 33% cases. Association with Esophageal Carcinoma is Statistically significant.

#### **SMOKELESS TOBACCO :**

It is significant in Esophageal carcinoma with 50% cases, Lax hiatus in 28 %.

#### **ALCOHOL :**

It has strong association with Esophageal Carcinoma (83%) cases. Alcohol associated with Esophageal Ca. is statistically significant.

#### **SPICY FOOD :**

Spicy food intake is significantly (50%) associated with Esophageal Carcinoma. Other disease occurrence being less significant.

#### **4.CONCLUSION :**

In this present study 200 cases, persons with Upper GI symptoms who underwent upper GI endoscopy in RMMCH were evaluated, recorded and the results analysed.

- The majority of patients were Males (62.5%) higher than Females (37.5%). Highest percentage of study participants were in the age group of 26- 50 years (59.5%)
- The most common habitual factor in the present study was found to be smoking, followed by alcoholism, in particular the beedies among males. Whereas smokeless tobacco in various forms followed by spicy food were common habitual factors in women.
- Most of the patient's abnormal endoscopic findings were from low Socioeconomic status 49%. 41.3 % of persons having esophageal diseases were diagnosed to have Reflux esophagitis, Hiatus hernia in 26.6 %, and Carcinoma Esophagus in 4 % cases. Squamous cell carcinoma is the most common type followed by Adenocarcinoma. Lower end growth is more common than mid or upper 1/3 rd growth.

Life style modifications in the form of healthy dietary habits, avoiding smoking, tobacco use, alcohol abuse and Spicy foods may help in altering the modifiable risk factors associated with Esophageal diseases and help in saving morbidity and mortality.

Early detection of Premalignant lesions and mucosal changes can help in identifying High risk patients prone to develop malignancy.

#### **5.REFERENCES :**

- American Society for Gastrointestinal endoscopy Guidelines for endoscopy. 2000. Appropriate use of gastrointestinal endoscopy. *Gastrointestinal Endoscopy* Vol.52, No. 6.
- Enzinger, PC and Mayer, RJ. 2003. "Esophageal cancer". *N. Engl. J. Med.* 349 (23):2241-52.
- Gerson, L.B, and Triafilopoulos, G. 2002. Screening for esophageal adenocarcinoma: An evidence based approach. *AMJ Medicine* 2002; 113 (5): 499 -504. 6.
- Hirota, W.K. 1999. Specialized intestinal metaplasia dysplasia and cancer of the esophagus and esophagogastric junction : Prevalence and clinical data *J.Gastroenterol.* 116 (2) 277-85
- Hirota, W.K and Zuckerman, M.J. 2006. ASGE guidelines the role of Endoscopy in the surveillance of premalignant conditions of the upper GI tract *Gastrointestinal endoscopy*, 63:570-580
- Kulig, M, Nocon, M, Vieth, M. 2004. Risk factors of gastroesophageal reflux disease: methodology and first epidemiological results of the ProGERD study. *J Clin Epidemiol*, 57: 580-9.
- Sano, T, Katai, H, Sasako, S. 2009. The management of early gastric cancer. *Surgical oncology*. 9 : 17 - 22.
- Ukarpol, N., Lertprasertsuk, N., Wongsawasdi, L. 2004. Recurrent abdominal pain: the utility of upper GI endoscopy and histopathology. *Singapore Med Journal* 45 (3).
- Zou, D, He, J, Ma, X, Chen, J, Gong, Y and Man, X. 2011. Epidemiology of symptom-defined gastroesophageal reflux disease and reflux esophagitis: the systematic investigation of gastrointestinal diseases in China (SILC). *Scand J Gastroenterol.* 46(2):133-41.

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