

# Tobacco Addiction and Otorhinolaryngological Manifestations

DR. RESHMA INGOLE

---

**Abstract:** Use of Tobacco is injurious to health. Tobacco use is responsible for 10% of adult deaths worldwide. Tobacco use is responsible for various carcinomas, multiple vascular and respiratory diseases, eustachian tube dysfunction, middle ear effusion and conductive hearing loss, rhinorrhea, sinusitis and hair graying. Tobacco use in the form of chewing, smoking, sniff leads to various benign and malignant conditions. In this study tobacco consuming patients were selected on personal history. The study subjects were classified according to socioeconomic status and categorised by Kuppuswamy classification 2014. Healthy age, sex matched control group without addiction to tobacco; alcohol was selected and compared with tobacco addict population. Tobacco consumption pattern was studied in Indian population of different socioeconomic class in association with various otorhinolaryngological manifestations.

**Keywords:** Tobacco, socioeconomic status, otorhinolaryngological.

---

## 1. INTRODUCTION

Tobacco use is responsible for 10% of adult deaths worldwide and therefore it becomes global problem. Nicotine present in tobacco leaves has stronger addiction than the addiction to heroin, cocaine, marijuana or alcohol. (1) In India, 86% tobacco is used for smoking, 13% is used as chewing tobacco and 1% as snuff (2). Use of tobacco products is harmful and there is no safe limit for consumption of tobacco. After stoppage of this product the risk of cancer development remain there for next 10 years.

Tobacco smoking is also a risk factor for multiple vascular and respiratory diseases. In children exposure to tobacco smoke leads to eustachian tube dysfunction, middle ear effusion and conductive hearing loss (3).

World Health Organization (2013) had shown that as a result of passive exposure to tobacco smoke each year 600,000 people die (4). Tobacco smoke causes nasal irritation, nasal congestion, and rhinorrhea. Recent studies suggest that during active smoking changes in sinus mucosa would occur and which may be dose and duration dependant of tobacco smoke (5). Smoking leads to damage to the melanin-producing cells which causes hair graying (6). There is also a link between smoking and hair loss in men (7).

## 2. MATERIALS AND METHODS

In this study tobacco consuming patients were selected on personal history. Tobacco consumption in the form of tobacco, tobacco with lime, tobacco consumption in the pan(quit), tobacco mishari application on teeth, tobacco smoking in the form of bidis and ciggarrates, ghutka, mawa, jerda, tobacco used as snuff, etc. all were included. Patients included in this study population had consumed tobacco products daily for more than 2 years duration. The selection of patients was done at random. Clinical examination of patients was done which included ear, nose and throat examinations. All patients included in this study were Indians belonging to different communities. The study subjects were classified according to socioeconomic status and categorised by Kuppuswamy classification 2014. Dietary habits (vegetarian and non vegetarian diet), other habits like addiction to tea, coffee, alcohol, occupation, family income, tobacco consumption pattern and duration of tobacco addiction was noted. Healthy age, sex matched control group without addiction to tobacco, alcohol was selected.

### 3. OBSERVATIONS AND RESULTS

Table 1 Male and Female Distribution in Study Population

Sex	Benign	Malignant	Control
Male	64	66	38
Female	11	09	37

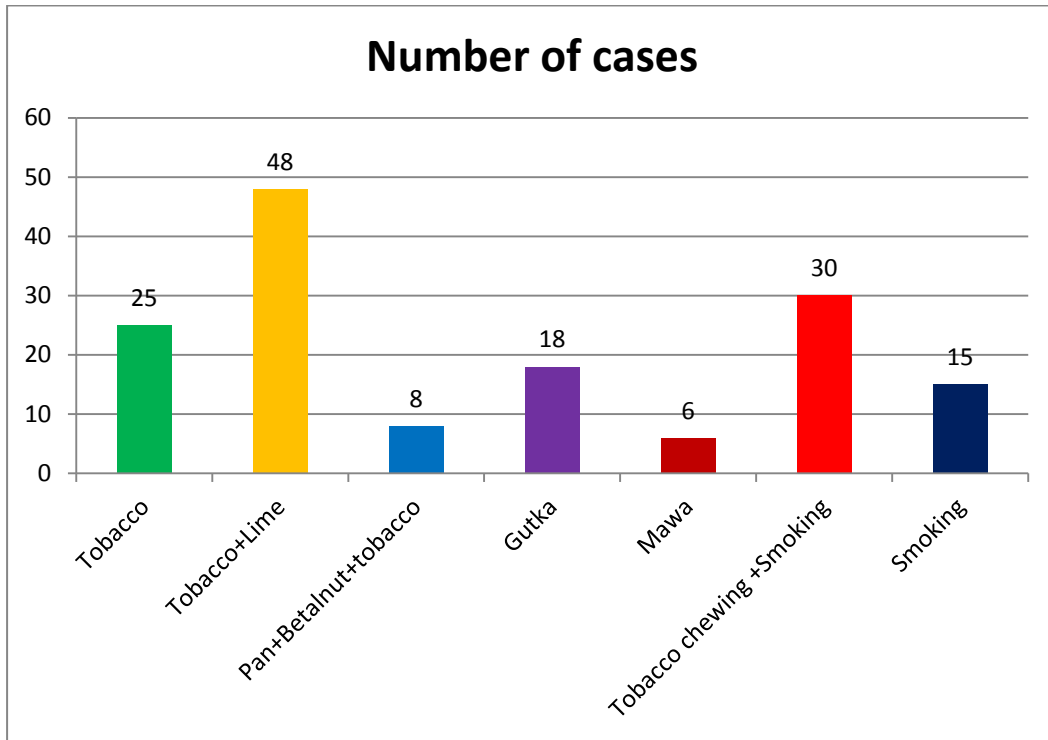


Figure I Tobacco consumption pattern

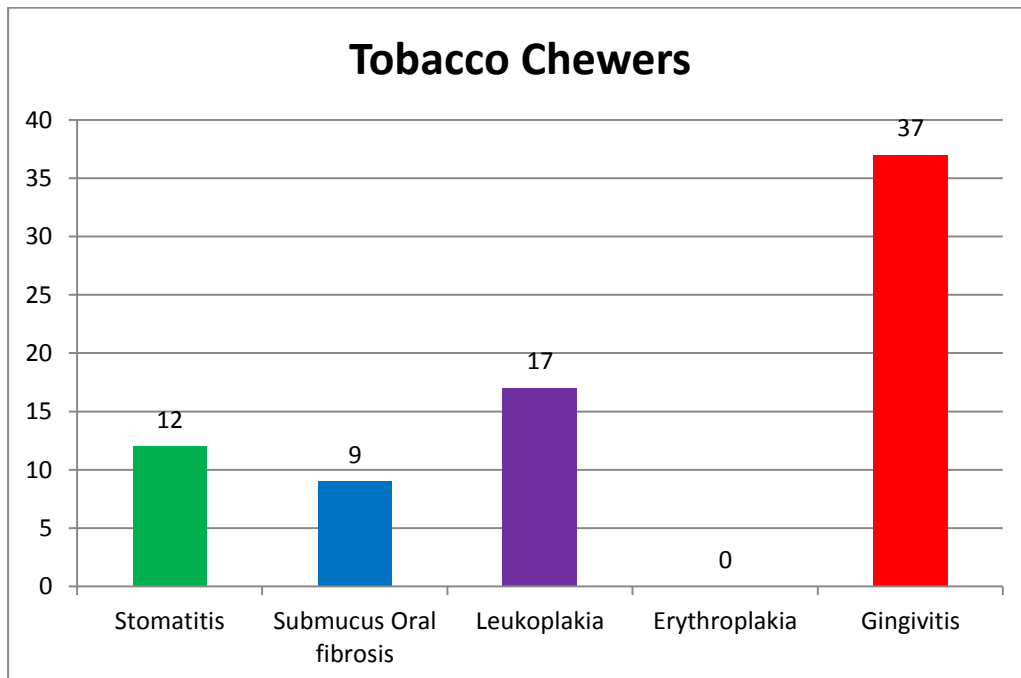


Figure II Benign Oral Lesions Seen In Study Population

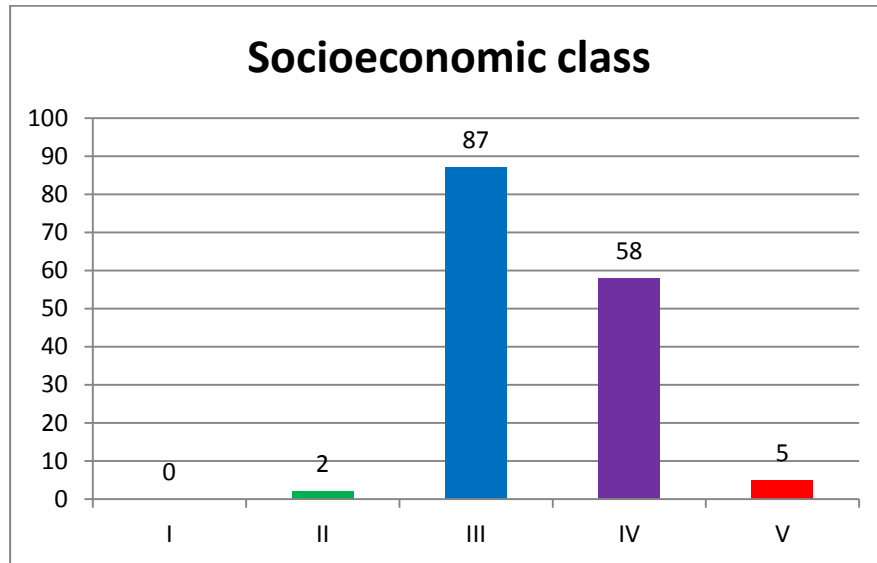


Figure III Socioeconomic status in Study Population (Kuppuswamy classification 2014)

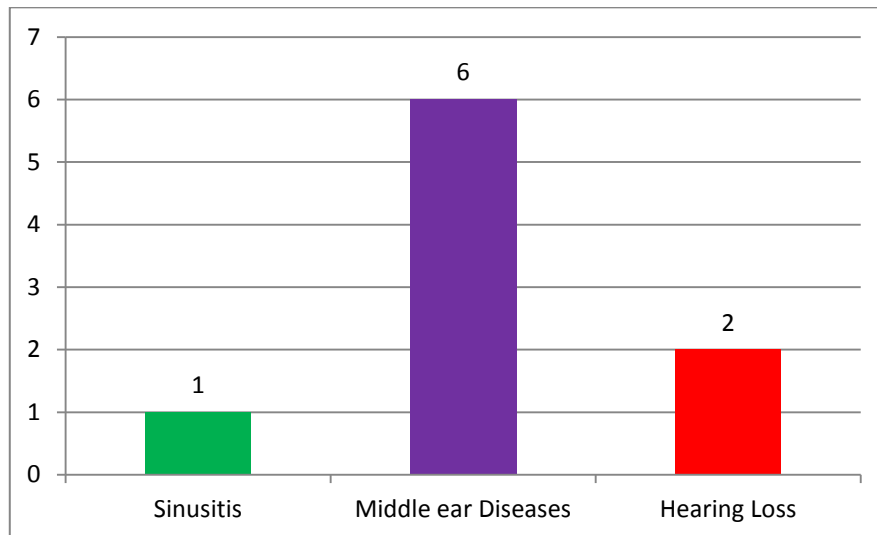


Figure IV Ear Diseases, Hearing loss and Sinusitis Seen In Tobacco Consumers with benign lesion.

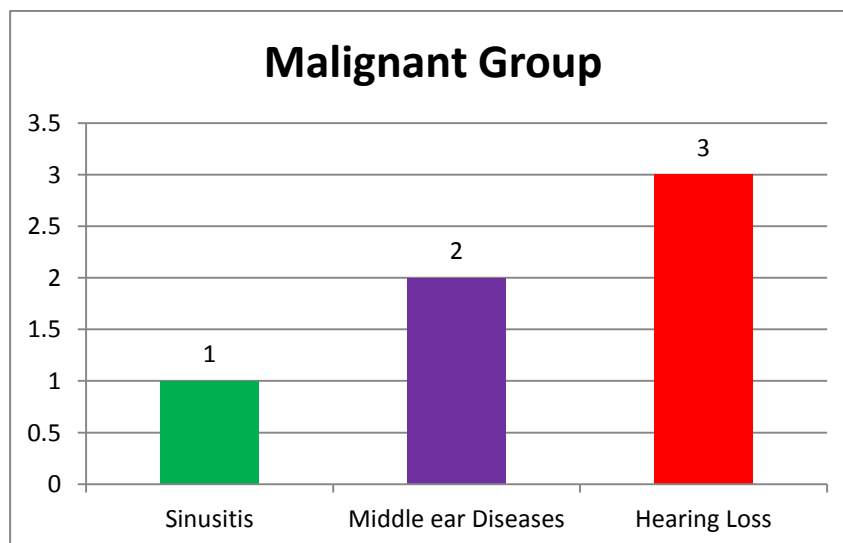


Figure V Ear Diseases, Hearing loss and Sinusitis Seen In Tobacco Consumers with malignant lesion

#### 4. DISCUSSION

The development of human cancer is multifactorial. Various toxic chemicals present in tobacco are metabolised in the human body of users which causes cellular damage. In the present study group mean age for malignant lesion in the male patients was 54 yrs while mean age for malignant lesion in the female patients was 60 yrs. Present study show younger patients with male predominance both in benign and malignant conditions of oral cavity. (Table 1) 86.6% Younger males had a higher prevalence due to tobacco consumption in multiple forms. Tobacco addiction begins early between 15 to 25 years and common in single person. The causes of tobacco addiction were frustrations, failures, lack of friend circle. These findings agree with studies carried out by Sujatha D, Hebbar PB, Pai A in 2012, but the male proportion was higher and Pattern of tobacco was different (8,9,10).

Male subjects consume tobacco and lime, ghutkha chewing and smoking (bidi and cigarettes) and females consume pan and mishari application on teeth; very few were addict to tobacco sniff (Figure I)

3of the premalignant condition in the oral submucous fibrosis.

Figure III categories different socioeconomic status in Indian population (14). No correlation obtained between tobacco consumption and ear diseases. 6 patients with benign lesions and 2 subjects with malignant lesion had chronic suppurative otitis media with central perforation of the tympanic membrane with mild to moderate sensorineural hearing loss were belonging to upper lower class(3,15,16,17,18,19).

#### 5. CONCLUSION

Young Males had a higher prevalence of benign and malignant lesions than females. Common consumption pattern was tobacco with lime applying between gums and buccal mucosa (48%) along with (30%) tobacco chewing and smoking. Male subjects consume tobacco and lime, ghutkha chewing and smoking (bidi and cigarettes) and females consume pan and mishari application on teeth; very few were addict to tobacco sniff. 58 % Oral lesion with benign and malignant seen in class III study population was gingivitis followed by leukoplakia. No correlation found between sinusitis, hearing loss, middle ear diseases and tobacco consumption.

#### REFERENCES

- [1] Worldwide trends in tobacco consumption and mortality, WHO.
- [2] Mehta FS, Hamner JE. Tobacco-related oral mucosal lesions and conditions in India - A guide for dental students, dentists and physicians. Bombay: Basic dental research institute, Tata Institute of fundamental research; 1993.
- [3] Talaat HS, Metwaly MA, Khafagy AH, Abdelraouf HR. Dose passive smoking induce sensorineural hearing loss in children? Int J Pediatr Otorhinolaryngol. 2014; 78(1):46-9.
- [4] Palavra IR, Franelić IP, Milanović SM, Puljić K. [Passive smoking—active killer]. Lijec Vjesn 2013; 135(11-12):326-9.
- [5] Reh DD, Higgins TS, Smith TL. Impact of tobacco smoke on chronic rhinosinusitis: a review of the literature. Int Forum Allergy Rhinol 2012 ;2(5):362-9.
- [6] Trueb RM. Pharmacologic interventions in aging hair. Clin Interv Aging 2006; 1:121–9.
- [7] Su LH, Chen TH. Association of androgenetic alopecia with smoking and its prevalence among Asian men: A community-based survey. Arch Dermatol. 2007; 143:1401–6.
- [8] Oral squamous cell carcinoma: clinicopathological features from 346 cases from a single Oral Pathology service during an 8-year period Fábio Ramôa PIRES, Amanda Barreto RAMOS, [...], and Teresa Cristina Ribeiro Bartholomeu dos SANTOS
- [9] Sujatha D, Hebbar PB, Pai A. Prevalence and correlation of oral lesions among tobacco smokers, tobacco chewers, areca nut and alcohol users. Asian Pac J Cancer Prev. 2012; 13(4):1633-7.
- [10] Hoffmann D, Rivenson A, Chung FL, Wynder EL. Potential inhibitors of tobacco carcinogenesis. Ann N Y Acad Sci. 1993 ;28 (686):140-60.

- [11] Angadi PV, Rao SS. Areca nut in pathogenesis of oral submucous fibrosis: revisited. *Oral Maxillofac Surg.* 2011; 15(1):1-9.
- [12] Hashibe M, Mathew B, Kuruvilla B, Thomas G, Sankaranarayanan R, Parkin DM, Zhang ZF. Chewing tobacco, alcohol, and the risk of erythroplakia. *Cancer Epidemiol Biomarkers Prev.* 2000; 9(7):639-45.
- [13] Chandra P, Govindraj P. Prevalence of oral mucosal lesions among tobacco users. *Oral Health Prev Dent.* 2012; 10(2):149-53.
- [14] Llewellyn CD, Linklater K, Bell J, Johnson NW, Warnakulasuriya KA. Squamous cell carcinoma of the oral cavity in patients aged 45 years and under: a descriptive analysis of 116 cases diagnosed in the South East of England from 1990 to 1997. *Oral Oncol.* 2003 ; 39(2):106-14.
- [15] Blakley BW, Blakley JE. Smoking and middle ear disease: are they related? A review article. *Otolaryngol Head Neck Surg.* 1995 ; 112(3):441-6.
- [16] Cruickshanks KJ, Klein R, Klein BE, Wiley TL, Nondahl DM, Tweed TS: Cigarette smoking and hearing loss: the epidemiology of hearing loss study. *JAMA* 1998; 279:1715-1719.
- [17] Adair-Bischoff CE, Sauve RS. Environmental tobacco smoke and middle ear disease in preschool-age children. *Arch Pediatr Adolesc Med.* 1998; 152(2):127-33.
- [18] Shafey O, Eriksen M, Ross H, Mackay J: *The Tobacco Atlas*. 3rd edition. Atlanta: American Cancer Society; 2009.
- [19] Lee WK, Ramanathan M, Jr, Spannhake EW, Lane AP. The cigarette smoke component acrolein inhibits expression of the innate immune components IL-8 and human beta-defensin 2 by sinonasal epithelial cells. *Am J Rhinol.* 2007 ; 21(6):658–663.