

INCREASED RISK OF ORAL CANCER IN BIDI SMOKERS: A PILOT STUDY***Dr. Juhi Gupta**

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ABSTRACT

Introduction: Cancer is one of the most common causes of morbidity and mortality today. It is estimated that around 43% of cancer deaths are due to tobacco use, unhealthy diets, alcohol consumption, inactive lifestyles and infection. Oro-pharyngeal cancer is significant component of the global burden of cancer. Tobacco and alcohol are regarded as the major risk factors for oral cancer. The evidence that smokeless tobacco causes oral cancer was confirmed recently by the International Agency for Research on Cancer. But apart from smokeless tobacco and alcohol bidi smoking especially in people from low socio economical status showed increased risk of oral cancer. Several epidemiological studies suggest that bidi smoking increases the risk of oral cancer. No systematic review, however, has been reported to examine how consistent the evidence is across the studies.

Aims and Objectives: To evaluate various etiological factor associated with oral cancer and to evaluate increased risk of oral cancer in bidi smokers.

Material and Methods: 79 patients suffering with oral cancer who reported to the Department of Oral pathology/Oral medicine and Radiology of Z.A Dental College, AMU, Aligarh for dental evaluation prior to radiation therapy were included in our study. **Results:** Result of the study showed significant increased risk of oral cancer in bidi smoker. **Conclusion:** It is important that this information be incorporated into smoking prevention and cessation efforts, particularly among the urban poor and rural mass in South Asian countries where bidi smoking is widely prevalent.

KEYWORDS: Oral Cancer, Bidi Smoking Tendu leaves, Gutka Chewing, Nicotine.

INTRODUCTION

Oral cancer is the eleventh most common cancer globally.^[4] There is a wide geographical variation in the incidence of oral cancer. Approximately two-thirds of patients are present in the developing countries of Southeast Asia, Eastern Europe and Latin America.^[3] India has one of the highest incidences of oral cancer and accounts for about 30% of all new cases annually.^[5] High prevalence of smokeless tobacco use has led to an increasing incidence, which in combination with delayed presentation has made oral cancer a major health problem in India. In India, the gingival-buccal complex (alveolar ridge, gingival-buccal sulcus, buccal mucosa) forms the most common subsite for cancer of the oral cavity, in contrast to cancer of the tongue that is more common in the western world. Cigarette smoking and use of smokeless tobacco are the well established etiological factors in development of oral cancer.

Bidis are small hand-rolled cigarettes which are very common in India, seven or eight times more so than cigarettes. Although primarily an Indian product, bidis are exported abroad and have recently become popular in the United States, especially among young people. This is a cause for public health concern both in the U.S. and

globally. Meta analysis done by researchers on bidi smoker and oral cancer had shown co-relation between the two.^[2]

With this background a study has been conducted on oral cancer patient reported to Deptt. Of Oral Pathology/Oral Medicine and Radiology with aims and objectives to evaluate various etiological factors associated with oral cancer and to evaluate increased risk of oral cancer in bidi smokers.

MATERIAL AND METHODS

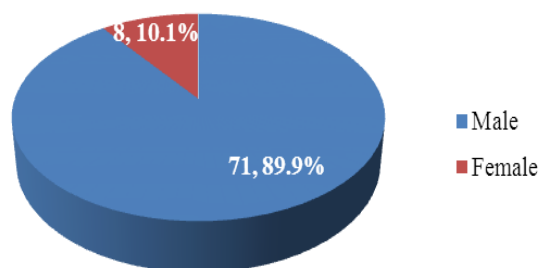
Patient suffering with oral cancer who visited to department of Oral Pathology/Oral medicine and Radiology of Z. A. Dental College for dental treatment prior to radiation therapy were evaluated for various etiological factors associated with oral cancer. Careful oral examination was done and oral cancer with respect to various sub sites of oral cavity were examined and noted. Detailed history of habit, frequency and duration of habit were recorded.

RESULTS

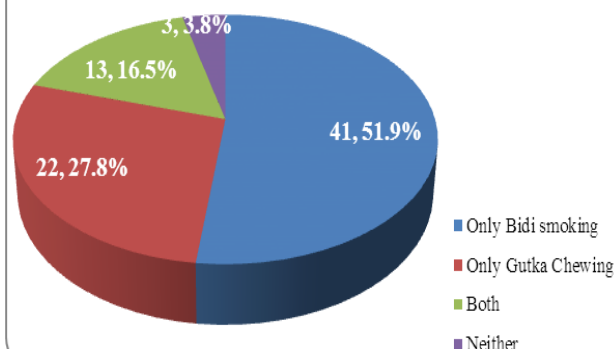
In the period from March 2016 to September 2016 79 patients suffering with cancer of various sub sites of oral

cavity had reported to Department of Oral Pathology/Oral Medicine and Radiology of Z.A. Dental college. Most of the patient belonged to poor socio economic status. Out of 79 patients 71 patients were male and 8 were female. Except three cases all the other patients had history deleterious habits like gutka chewing, bidi smoking or paan chewing or combination of gutaka chewing and bidi smoking.

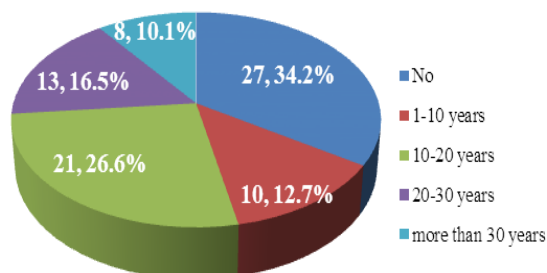
Gender Distribution among oral cancer patients.



Distribution of oral cancer patients according to their Habbits



Distribution of Subjects with Duration of Bidi Smoking



DISCUSSION

"Bidis" or "beedis" are small, hand-rolled unfiltered cigarettes that consist of tobacco flakes rolled in a tendu

leaf (*Diospyros elanoxylon*) and tied with thread. They are also called "beeris" in countries, such as Bangladesh. The tobacco rolled in bidis is different from that used in cigarettes and is referred to as bidi tobacco. In India, smoking accounts for majority of total tobacco consumption (72%) and among the total smoking habits, 73% is in the form of bidi and 27% is in the form of cigarette.^[10]

Tobacco usage in India is also contrary to world trends since chewing tobacco and the bidi are the dominant forms of tobacco consumption, whereas internationally the cigarette is the most prominent form of tobacco use. About 19% of tobacco consumption in India is in the form of cigarettes, while 53% is smoked as bidis, the rest is used mainly in smokeless form. Bidis tend to be smoked by lower economic classes and have a level of social acceptance in different cultures.^[1]

Results of the pilot study done on oral cancer patients reported to the Deptt. Of Oral pathology/Oral medicine and radiology showed significantly increased risk of oral cancer in bidi smokers. Out of 79 patients, 41 patients were exclusive bidi smokers (51.9%) and 13 patients had habit of both bidi smoking and gutka chewing (16.5%). So, 68.4% patients had history of bidi smoking either alone or in combination with gutka chewing, that's a significant number.

The tobacco content of bidi is low as compared to cigarettes but the nicotine and tar content is higher as compared to cigarettes. Study done by Jennifer et al in 2001 revealed that the nicotine concentration in the tobacco of bidi (21.2 mg/g) was significantly greater than the tobacco from the commercial filtered (16.3 mg/g) and unfiltered cigarettes (13.5 mg/g).^[6] Moreover, there is less air dilution through the tendu leaf than conventional cigarettes.^[8]

Nair et al in 1989 identified carcinogenic tobacco specific nitrosamines from the smoke of bidis in concentrations similar to those of commercial cigarettes.^[7] Bidis also deliver considerable amounts of carbon monoxide. Blood carboxyhaemoglobin concentrations were raised in bidi smokers and the concentrations of carboxyhaemoglobin were correlated with degree of smoke inhalation and number of bidis.

Low combustibility forces a smoker to inhale more deeply resulting in greater delivery of carbon monoxide, nicotine, and other components of tobacco smoke. All of these factors exaggerate the health risks associated with nicotine and other components of bidi smoke.

Finding of our study is similar to the study done by Abdoul Hossain et al^[9] in which increased risk of oral cancer was observed amongst bidi smokers as compared non bidi smokers. Meta analysis done by Rahman et al also concluded that there is increased risk of oral cancer in bidi smokers.^[2] Study done by Jayalekshmi et al on

bidi smoker and gutka chewer concluded that bidi smoking strongly increased the risk of oral cancer among men without tobacco chewing habit.

CONCLUSION

Results of study clearly indicate that bidi smokers are at increased risk of oral cancer. It's a myth to believe that as tobacco content is less in bidi so it's a cheaper and safer alternative to cigarette smoking.

Need of the hour is to incorporate these information into smoking prevention and cessation efforts. Urban poor and rural mass in South Asian countries like India must be made aware of hazardous effects of bidi, where bidi smoking is widely prevalent.

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