High risk of oral cancer in North India

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The carcinogenic property of tobacco is well known, even as the production and consumption of tobacco products is popularized worldwide. While the 'smoking way' of consumption of tobacco causes high risk of lung carcinoma, the 'oral way' primarily poses risk of oral carcinoma in addition to leukoplakia, erythroplakia, submucosal fibrosis, esophageal, hypo-pharyngeal, head and neck cancers.

According to WHO[1], the tobacco smoke (TS)-type consumption was 60% and the smokeless tobacco (SLT) oral habit-type consumption was 40% in India. Here, TS-related cancers are higher in men and SLT-related cancers are higher in women[2]. Annually, about 800,000 deaths occur in the country due to tobacco consumption[3]. Recently, it was reported that 21% of adults used SLT, 9% used TS and 5% used SLT as well as TS in India[4]. The National Cancer Control Programme has focused on primary prevention and tobacco control programmes.

SLT consumption has increased dramatically in North India and poses a great challenge. This is because tobacco users are much higher in the northeastern states compared to the other states[5]. Oral cancer incidence has been estimated to be 10 per 100,000 among males in India and it is steadily increasing in North India[6]. The risk of development of oral cancer in North India can be more precisely defined through the typical oral consumption of tobacco products here.

The threat of oral carcinoma is primarily associated with the consumption of SLT, such as khaini, guthka, gul, pan masala, zarda, kharra and nus. The oral habit may be through chewing or sucking. The use of khaini (a mixture of tobacco and lime) is common in North India. Keeping khaini inside the mouth, between the tongue and the cheek (lower gingivolabial), for several hours is a familiar habit among addicts. Figure 1 shows the preparation of khaini and the symptoms of oral carcinoma.

Prolonged oral consumption of tobacco leads to the development of oral precancerous diseases and increases the risk of oral cancer. Due to lack of cancer awareness among the people, the SLT oral consumption habit is on the increase. The high cost of TS products compared to SLT products might be enhancing this habit. Further, SLT products are easily prepared and supplied illegally by small shopkeepers.

People try oral tobacco during early adulthood (13–25 years); this becomes a habit and persists in adult life (Figure 2). According to Patel[7], about 5500 adolescents start using tobacco every day in India, especially under the age of 15 years. Remarkably, people in the age group of 30–65 years have high prevalence of oral cancer. The use of tobacco by women is socially unacceptable, but the SLT oral habit is popular among women in North India and almost identical to men. Addicts consume SLT approximately 10–15 times per day. The oral habit might be higher among those who are poor, illiterate and on the other side of the socio-cultural barrier. Poor oral hygiene, malnutrition and vitamin B complex deficiency also enhance the risk of carcinoma in the mouth.

The majority of oral carcinoma is preventable in India by making forceful public awareness. In the current decade, tobacco smoking in public places is strictly prohibited after the implementation of an Act of the Supreme Court of India in 2003 (Cigarettes and other Tobacco Products: Prohibition of Advertisement and Regulation of Trade and Commerce, Production, and Supply and Distribution). There is an urgent need of different potential patterns of awareness programmes for the prevention of SLT oral habit among the people of North India. A comprehensive school-based education and awareness programme about cancers and their causative factors (including tobacco) is required. Contributions by volunteer organizations, NGOs and other public-care institutions are mandatory to implement the baseline prevention programme of SLT oral habit.

Figure 1. ***a***, A 17-year-old male addict showing the preparation of khaini, by mixing dried tobacco with lime using the thumb. ***b***, A 36-year-old male patient at Mahavir Cancer Sansthan (hospital and research centre), suffering from oral carcinoma in the lower alveolus site.

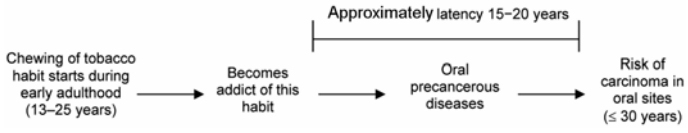

Figure 2. Schematic representation of tobacco chewing habit and oral cancer risk.

1. WHO, Tobacco health: a global status report, 1997; http://w3.whosea.org/tfi/issue_situation.htm
2. Murthy, N. S., Rajaram, D., Gautham, M. S., Shivaraj, N. S., Nandakumar, B. S. and Pruthvish, S, *Asian Pac. J. Cancer Prev.*, 2011, **12**, 387–391.
3. Nath, I. *et al.*, *Indian J. Med. Assoc.*, 1999, **97**, 377–378.
4. Global Adult Tobacco Survey 2009–10 Document, National Tobacco Control Programme, Ministry of Health and Family Welfare, Government of India.
5. Sinha, D. N., Gupta, P. C. and Pednekar, M. S., *Indian J. Cancer*, 2003, **40**(2), 43–59.
6. Moore, M. A. *et al.*, *Asian Pac. J. Cancer Prev.*, 2009, **10**, 49–67.
7. Patel, D. R., *Indian J. Pediatr.*, 1999, **66**(6), 817–824.

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