Abstract

Fundamentals of implementing any cancer control programs are the understanding of the burden of the disease in the community (incidence trends), risk factor profile and the awareness among the public about the cancer and its risk factors. In this project we attempted to investigate all these three inter related subjects, which would form the basis to implement a systematic oral cancer prevention strategy. In addition, we have investigated the efficacy of a novel oral cancer health education program to improve awareness of oral cancer in the community.

Recent data on the incidence trends from the low incidence, developed countries suggest that the head and neck cancers are increasing especially among young adults. In our study on incidence trends in India of two large tumor registry data, it was observed that there is an overall reduction in the incidence of head and neck cancers in urban and rural populations. However, there was a significant increase in the incidence of tongue cancers among females. An attempt was made to compare the Indian data (Mumbai) with the SEER data from US and it was observed that there was an overall reduction of head and neck cancers in India, whereas SEER revealed an increase in the incidence of head and neck cancers among males and an increase of tongue cancers among females. Among young adults, an increased incidence of oral cavity and pharynx cancer was observed among Indian males and tongue cancers among Indian females. Young Americans showed an overall increase in incidence in all head and neck cancer subsites except in the laryngeal cancers.

The incidence trends reflect the risk factor profile of the community. Prior reports suggests that 80% of the oral cancers can be attributable to established risk factors like tobacco in the form of smoking or chewing and alcohol consumption. The rest is attributed to factors like diet, viral etiology and genetic predisposition. There are now reliable economic data to suggest that tobacco consumption in India has decreased significantly over the past decade. The significant reduction in incidence may be attributable to lower prevalence of tobacco habits. In order to determine the current risk profile of head and neck cancers, a retrospective study was carried out in patients who have presented with head and neck squamous cell carcinoma. It was observed that oral cavity cancers formed the majority and 43% of the patients did not have any risk habits.
Therefore an attempt was made to determine the risk factors other than tobacco and alcohol in the subset of individuals.

A case control study to determine causative role of Human Papilloma Virus (HPV) in oral cavity cancer was undertaken. PCR was employed as the gold standard to detect the presence of HPV. In this study, the integration status of the virus was determined by PCR and catalyzed signal amplified in-situ hybridization. Also immunohistochemical analysis of the proteins involved in HPV carcinogenesis was carried out. It was observed that 48% of the cases were positive for oncogenic HPV16 among which 83% showed integration by PCR and 67% by in situ hybridization. Data from our study has observed that 33% had active E6-p53 pathway and 67%, the E7-pRb pathway and 19% had both the pathways active.

Increased awareness of oral cancer and its risk factors in the community are essential for better compliance to preventive measures and risk reduction strategies. A survey was carried out to assess the level of oral cancer awareness in a semi-urban population in Kerala. It was observed that the overall awareness of oral cancer and its risk factors is good and is proportional to the educational status though certain gaps exist stressing the need for targeted health education and risk factors cessation counseling.

An attempt was made to improve the awareness and early detection by ‘oral self examination’. A brochure was developed which gives detailed information on oral cancer, its risk factors, premalignant lesions illustrating the methods to perform oral self-examination. Two Panchayats with a total population of around 57,000 (majority of them are fishermen with high risk habits) were selected to test this concept. Initially brochures were distributed, public was instructed to perform oral visual examination and report to the local screening clinic if they had any suspicious lesions. Then the health workers performed house-to-house visit to collect information regarding the awareness of oral cancer and its risk factors using a validated questionnaire, provided health education, performed oral visual examination and referred the suspicious cases to the local screening clinic. In this study it was observed that the health education has improved the awareness. The oral cancer awareness was significantly higher among males and in the younger age group and in those without the risk habits. The risk habit awareness was significantly higher among individuals of higher education, females and in the younger age group and in those without the risk habits. Eighty seven percent practiced oral self-examination. Fifty four persons identified lesions on their own out of which 39 were confirmed by
health workers and only 8 visited the screening clinic. The program identified 216 pre-cancer and 3 new oral cancer cases in stage I/II through the health workers. Though there is good awareness among the public, there exists poor compliance to seek medical assistance. Further efforts should be channelised towards increased frequency of health education especially to the high-risk individuals, improving the motivation of the public, integration of the early detection into the existing health schemes and educating the school children.