SUMMARY

Certain studies in industrialized countries which have sought to examine the relationship between tobacco use - especially smoking - and periodontal disease, suggests that smoke tobacco use is an important factor in periodontal disease. However, there is a paucity of information with regard to tobacco use and periodontal disease in developing countries like Sri lanka where the baseline levels of plaque and rates of disease progression are higher than in developed countries. In this context, it is important to study the association between tobacco use and periodontal disease in Sri Lanka where the prevalence of periodontal disease is high and habits of tobacco consumption are common. The main objective of the present study was to determine the periodontal status of male smokers and betel chewers in a rural community in the Kandy district of Sri Lanka and compare it with that of male non tobacco users of the same community. A cross sectional community based analytical study was carried out in a sample of 2277 rural adult males comprising of 1035 non tobacco users, 809 smokers, 334 betel chewers and 99 tobacco users who used both smoke and smokeless tobacco. All subjects belonged to the age group of 20-60 years. The periodontal status of the study sample was ascertained by measuring levels of bacterial plaque using the Plaque Index, gingival inflammation using the Gingival Index, periodontal pocket depth and loss of epithelial attachment. All measurements were carried out on four sites namely buccal/labial, lingual/palatal, mesial and distal of all teeth present and the mean values for periodontal parameters were calculated.

Bivariate and multiple linear regression analytical techniques were used in order to analyse data gathered in the present study. Bi variate analysis of data revealed that the overall periodontal disease levels were significantly higher in betel chewers and smokers than in non tobacco users. These higher levels of periodontal disease remained significant even after controlling for plaque levels. Moreover, the overall mean number of teeth lost was significantly higher in betel chewers and smokers than in non tobacco users. Intra oral site specific relationships of periodontal disease also revealed that smokers and betel chewers had significantly higher overall levels of periodontal disease than non tobacco users. Multiple linear regression analysis of data disclosed that both smokers and betel chewers had significantly higher levels of bacterial plaque than non tobacco users notwithstanding age, oral hygiene practices and socio-economic status. The gingival inflammation was significantly greater in betel chewers than in smokers and non tobacco users independent of age, oral hygiene and socio-economic factors. Moreover, periodontal pocket depths were significantly deeper in smokers than in betel chewers and non tobacco users regardless of oral hygiene and socio-demographic factors. However, there were no significant effects of smoking and betel chewing per se on loss of epithelial attachment when controlled for oral hygiene, age and socio-economic factors. Nevertheless the effect of the quantity of tobacco used per se on loss of attachment was statistically significant even after controlling for age, oral hygiene and socio-economic status.

In terms of life time periodontal disease progression however, the effect of the quantity of tobacco used was considered limited (6.8×10^{-6} mm / year) when compared to that of oral hygiene (0.6mm / unit change in the Plaque Index).

Considering all of the above findings, it is possible to conclude that the present study has highlighted the importance of oral hygiene in the aetiology and control of periodontal disease in developing countries like Sri Lanka, while confirming the statistical significance of the quantity of tobacco used on the severity of periodontal disease.