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Studies on the Genotoxicity of *Gutkha*

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ABSTRACT Nowadays, smokeless tobacco consumption in the form of *gutkha* is receiving more popularity among the youth of India. In the present investigation, cytogenetic studies were carried out on 50 *gutkha* consumers and compared with controls, 50 men who did not have habit of smoking, alcohol drinking and consuming *gutkha*, tobacco and areca nut in any form. Frequency of chromosome aberrations (CA) and sister chromatid exchanges (SCE) were evaluated in peripheral blood lymphocytes, whereas frequency of micronucleated cells (MNC) was evaluated in exfoliated buccal mucosa. A significant increase ($p < 0.001$) was noted in values of all three cytogenetic markers among *gutkha* consumers compared with controls viz. CA (0.92-3.60), SCE (3.66-6.84), MNC (0.09-0.98). The frequency of all end points was higher among high age group individuals (>31) compared with low age group individuals viz CA (1.67-2.81), SCE (4.65-5.80), MNC (0.36-0.70). The increased frequency of these end points was found to be significantly correlated ($p < .001$) with duration of consumption ($b = 0.193, 0.039, 0.032$ for CA, SCE and MNC respectively) and number of pouches consumed per day (b being 0.193, 0.441, 0.429 for CA, SCE and MNC respectively). Besides this, significant difference was found between the mean values of CA and SCE among *gutkha* consumers and *gutkha* consumers + drinkers + smokers and also significant increase was found between *gutkha* consumers + smokers and *gutkha* consumers + drinkers + smokers for CA.