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Genotoxic Studies in Pan Masala Chewers: A High Cancer Risk Group

J.S. Yadav and P. Chadha

*Human Genetics Unit, Department of Zoology, Kurukshetra University,
Kurukshetra, 136119, Haryana, India*

KEY WORDS Chromosome aberration; sister chromatid exchanges; micronucleated cells; pan masala; lymphocytes.

ABSTRACT The genotoxic effects of Pan Masala consumption were investigated in the somatic chromosomes of 50 men habituated to chewing Pan Masala (PM) and compared with controls, 50 men who did not consume PM. Chromosomal aberrations (CA) and sister chromatid exchanges (SCE) were investigated in peripheral blood lymphocytes, tissue indirectly exposed to Pan Masala (PM), and the frequency of micronucleated (MN) cells was scored in exfoliated buccal mucosa, tissue directly exposed to PM. When compared with the results obtained in blood samples from the comparable control group, a significant increase ($P < 0.001$) was noted in all the above mentioned parameters : CA (0.86-3.36), SCE (3.61-6.64), MN (0.104-0.656). A significant difference occurred between the results for lower and higher age groups (< 30 years and > 30 years) in all parameters considered, viz CA (1.49-2.81), SCE (4.93-5.35), MN (0.25-0.49). The increased frequency of these end points was found to be significantly correlated ($P < 0.001$) with the duration of consumption (value of b for CA, SCE, and MN being 0.205, 0.044 and 0.333 respectively) and number of pouches consumed per day (b being 0.191, 0.048 and 0.049 for CA, SCE and MN respectively).

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