



## ▼ UNDERGRADUATE ABSTRACTS

### UG -5 : SIGNIFICANCE OF MICRONUCLEUS IN EXFOLIATES BUCCAL MUCOSA OF SMOKERS IN A RURAL POPULATION IN SOUTH INDIA.

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**Background:** In India, nearly, 1,30,000 Indians are dying due to tobacco related cancer. Identifying smokers, detecting intense nuclear damage by genetic tests like micronucleus test, counseling them about the ill-effects of smoking related cancer are the only hope in reducing the burden of this disease. Thus, the aim of the study was to compare the chromosomal alteration in the exfoliated cells from the buccal mucosa of smokers based on their smoking index and their control counterparts to verify the genotoxic effects of the cigarette smoke and the utilizing the findings to facilitate early diagnosis and subsequent disease management tailored to the individual patient.

**Methods:** This is a descriptive and analytical study which was conducted at MGMC&RI, Pondicherry, a rural tertiary care hospital. The study includes thirty smokers belonging three groups of 10 each based on their smoking index (SI), as follows: Group I: SI < 150, Group II: SI 150–300, and Group III: SI > 300. SI

was calculated using the formula as given by Srinivasan et al.5:  $SI = \text{Numbers of cigarettes/bidis/cigars per day} \times \text{total duration of smoking in years}$ . Exfoliated buccal cells smears on the subjects and controls was done to study Micronucleus, the cytogenetic parameter to access nuclear damage following standard protocol.

**Results:** The mean value of MN in smokers, increased significantly with increase in the smoking index. In the case-control studies, the mean value of MN, of the study group was significantly higher than their control counterparts.

**Conclusion:** Thus, in an event of tobacco related genotoxicity, genetic instability appeared to exist in smokers belonging to any groups of smoking index than the controls, signifying that MN test play a key role in the evaluation of mutagenicity and primary prevention to any smoking related cancer in the future.