

### Conflicts of interest

The authors have none to declare.

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### Lymphocytes DNA damage from panmasala, gutkha, kharrah, chewing tobacco users and chain smokers of central India, by using single-cell gel electrophoresis assay



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**Background:** Oral submucous fibrosis (OSMF) is a chronic, complex potential potent pre-cancerous condition characterized by juxta-epithelial inflammatory reaction and progressive fibrosis of the lamina propria and deeper connective tissues. As the disease progresses, the jaws become rigid to the point that the sufferer is unable to open his mouth. These events are further influenced by exposures to carcinogenic agents including panmasala, gutkha, kharrah, tobacco consumption and smoking. Single-cell gel electrophoresis assay or comet assay is a sensitive and rapid method for DNA strand breaks; it further provides information on amount of damage among individual cells.

**Aim and Objective:** In this study, we are aimed to analyse the lymphocyte DNA damage from panmasala, gutkha, kharrah, chewing tobacco users and chain smokers of central India, by using Single-cell gel electrophoresis assay.

**Materials & Methods:** The peripheral blood samples from 60 addicted participants of age group 30–70 years were collected under sterile conditions in heparinised tubes used for Leukocytes culture and 30 healthy non-OSMF participants of same age group were taken as control. The informed consent was obtained. The comet assay conducted using three well OxiSelect™ Comet Assay Kit and stained with vista green dye, the slides were analysed by using Olympus® BX 51 fluorescence microscope. The results were statistically analysed.

**Result:** Mean age of participants were  $45.31 \pm 16.24$  (SD). Obtained comets were analysed by the CometScore 1.5 Software. The Comet score analysis shows that the mean % TDNA (Tail DNA) of comet in Leukocytes of addicted participants is found to be  $32.61 \pm 18.19$  (SD) than  $6.09 \pm 3.17$  (SD) mean % TDNA of control participants.

**Conclusion:** It can be conclude that addiction to panmasala, gutkha, kharrah, chewing tobacco users and chain smokers can damage DNA of peripheral blood leukocytes.

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### Genetical basis of Down syndrome



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**Objective:** The study was designed to evaluate the karyotype pattern, maternal age, clinical features and other systemic anomalies of Down syndrome cases in Tamilnadu population.

**Methods:** Cytogenetic analysis was carried on 96 cases presented with clinical features of Down syndrome from various special schools of Tamilnadu and retrospective analysis was also done from their medical records.

**Results:** Out of 96 cases, 94 were true trisomy, one case had translocation and one case presented with 46, XY, der(21;21)(q10;q10) and mother of same case presented with 45, XX, rob(21;21)(q10;q10). In the present study, the mean maternal age was found to be  $27.56 \pm 5.35$  years. In 73% of case mothers of Down syndrome the maternal age was  $\leq 30$  years; among them 41% were between the maternal ages ranging from 19 to 25 years and 32% ranging from 26 to 30 years. The maternal age  $\geq 31$  years were found in 27% cases. The most prominent clinical features observed in Down syndrome children greater than 60 percent-ages were: Epicanthic fold (97%), Mongoloid Slant (96%), High arched palate (89%), Flat Facial profile (83%), Small ears/Low set ears (75%), Short neck (69%), Furrowed tongue (61%), and Brachydactyly (67%) and Depressed Nasal Bridge (58%). Congenital heart disease was diagnosed in 36% among which 24% (VSD), 8% (ASD) and 4% (PFO) respectively. Gastrointestinal anomalies were noted in 3% and hypothyroidism in 14% of cases. Patchy Alopecia Areata was present in 2% cases.

**Conclusion:** A parental study is more important in the determination of the recurrence risk and to counsel them by providing available options.

### Conflicts of interest

The authors have none to declare.

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### Variations in the branching of cords of brachial plexus



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Brachial plexus is complex network of nerves, formed by joining and splitting of ventral rami of spinal nerves C5, C6, C7, C8 and T1 forming trunks, divisions and cords. The nerves emerging from trunks and cords innervate the upper limb and to some extent pectoral region. Scanty literature describes the variations in the formation of cords and nerves emanating from them. Moreover the variations of cords of brachial plexus and nerves emanating from them have iatrogenic implications in the upper limb and pectoral region. Hence, study has been carried out. Twenty-eight upper limbs and posterior triangles from fourteen cadavers fixed in formalin were dissected and rare and new variations of cords were observed. Most common variation consisted of formation of posterior cord by fusion of posterior division of upper and middle trunk and lower trunk continued as medial cord followed by originating of two pectoral nerves from anterior divisions of upper and mid-