

Quantitative evaluation of micronuclei in oral squamous cell carcinoma and oral submucous fibrosis patients: a comparative study.

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Abstract

BACKGROUND:The forte of research today aims at determining genotoxic changes in human cells as rapidly as possible. Micronuclei estimation in exfoliated cells is an easy, noninvasive and a reliable method to monitor genotoxic changes due to various reasons in oral mucosal cells. **AIMS AND OBJECTIVES:**To identify, quantify and compare micronuclei in exfoliated buccal mucosal cells of healthy, oral submucous fibrosis (OSMF) and oral squamous cell carcinoma (OSCC) participants. **PATIENTS AND METHODS:**In the present study, buccal smears from the 60 participants (30 each of OSMF and OSCC) and 30 age and sex matched controls were obtained and stained using Papanicolaou (PAP) staining method and observed under 100X magnification to identify and quantify micronuclei in the exfoliated cells of oral mucosa. **RESULTS:**There was a significant increase in micronuclei count from control to OSMF to OSCC. Also, a significant increase in the micronuclei frequency is observed with the different clinical stages and histological grades of OSMF and different histological grades of OSCC. **CONCLUSION:**Micronucleus assay can be used as an easy and consistent marker for genotoxic evaluation in higher risk groups and can be used for better treatment evaluation and prognosis in cases of OSMF and OSCC. Some relevant patents are also outlined in this article.