

Conference Abstract

DAY 1 15th September 2023 (Friday)

ORAL 1

2.00-3.30 pm

Scientific Session 6

A study to assess the cytogenetic toxicity in buccal epithelial cells of Covid-19 suspected patients**Vishnu B, P K Sankaran, Senthilmurugan, Bakshi**

AIIMS, Mangalagiri

Email: m01020118@aiismangalagiri.edu.in

Background: SARS CoV 2 virus causes COVID 19 by infecting nasal and oral cavities primarily by attaching its spike proteins to angiotensin converting enzyme 2 receptors expressed in epithelial cells.

Objectives: This study is to evaluate the micronucleated cell count, metanuclear abnormalities and Genotoxic factor in exfoliated buccal mucosal cell among the COVID-19 suspected patients.

Methodology: This cross-sectional study was conducted in 100 (AIIMS/MG/IEC/2022-23/177) symptomatic COVID 19 suspected patients from the institute. The sample size 100 was divided into Group 1: RT-PCR positive patients (n= 25); Group 2: RT-PCR negative patients (n=75). The buccal swab taken using wooden spatula was smeared in marked glass slides and stained with RAPID-PAP. Statistical analysis was done using Chi-square test.

Result and Discussion: The micronuclei count and metanuclear abnormalities were significantly higher in COVID 19 patients compared to negative patients (Table 1, Table 2, figure 2). The genotoxic factor was 2.68 which indicates positive genotoxicity effect of COVID 19 infection on buccal mucosal cells. The micronuclei occurs due to mal segregation of sister chromatids during mitotic division [1] (Figure 1). The possible mechanism for appearance of nuclear changes is shown in Figure 3 [2].

Conclusion: SARS CoV 2 has positive genotoxicity effect and expresses its carcinogenic toxicity effect on buccal mucosal cells by increasing the expression of micronucleated cells, pyknotic cells, karyolytic cells and karyorhexic cells. These micronuclei and metanuclear changes can be used as a reliable marker to identify the early genomic damage caused by SARS CoV2 virus expressing on buccal mucosal cells.