MICRONUCLEUS SCORE IN THE Buccal Mucosa OF Women WITH BREAST CANCER AND THE RELATIONSHIP TO CHEMOTHERAPY

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Background: There are multiple genomic differences between healthy women and women with breast cancer. Chromosomal damage and loss can be detected through cytogenetic methods, one of which is the micronucleus (MN) assay. This study is designed to evaluate the genomic differences between healthy women and women with breast cancer through the MN assay.

Methods: This study included 32 healthy women and 24 breast cancer patients. The buccal smears of breast cancer patients were taken three times: before chemotherapy, and after two and four cycles of chemotherapy. Buccal smears of the control group and patients were taken, and 1000 epithelial cells were counted per patient, with the criteria of The Human Micronucleus Project for the assay of micronucleated cells.

Results: The MN scores of breast cancer patients before chemotherapy, after 2 cycles chemotherapy and after 4 cycles chemotherapy were statistically significantly higher than the MN scores of the healthy control group (p < 0.001).

Conclusion: The MN score of buccal mucosa is higher in breast cancer patients than that in healthy individuals. Furthermore, the MN score increases with the application of chemotherapy. These results and our findings propose that the MN assay of buccal mucosa samples can be used to determine the genotoxic effect and biomonitoring of chemotherapy.