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Determination of Genotoxic Damage by Comet Assay in Smokers

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ABSTRACT The clinical course of most diseases related to smoking has a strong relationship with genotoxicity. In this study, the researchers aimed to compare DNA damage of smokers and non-smokers to determine the genotoxic risk. In total, 50 volunteers were included in this study; 30 of them smokers and 20 of them forming the non-smoker control group. Peripheral blood samples taken from the volunteers were determined with comet assay. The researchers determined the DNA damage ratio as 12, 75 (± 7. 14) from smokers 10, 41 (± 3.41) from non-smokers ($p > 0.05$), and also higher DNA damage in male smokers than female ones ($p < 0.05$). There was no correlation between age and DNA damage. In conclusion, there was no significant difference between smokers and non-smokers in terms of DNA damage, but there were some important changes in the DNA of smokers and genomic instability was adversely affected.

Abbreviations: SCGE: Single Cell Gel Electrophoresis; DNA: Deoxyribonucleic Acid; WHO**:** World Health Organization; HMA: High Melting Agarose; LMA: Low Melting Agarose