Does GSTP1 polymorphism contribute to genetic damage caused by ageing and occupational exposure?

ABSTRACT

The aim of our study was to see the effects of GSTP1 polymorphism on biomarkers of ageing, including micronuclei (MN), comet tail length, and relative telomere length in automobile repair workers, who are exposed to a broad spectrum of potential mutagens. The analysis was performed on buccal cells collected from occupationally exposed and non-exposed (control) subjects. Samples were analysed using cytogenetic and molecular methods, including restriction fragment length polymorphism (RFLP), MN test, comet assay, and real-time PCR. The results confirmed the DNA damaging effects of substances used in the mechanical workshops, but did not confirm the influence of GSTP1 gene polymorphism on DNA damage. However, further studies on both occupationally exposed and control populations are needed to understand the relationship between GSTP1 polymorphism and genome damage.

Keyword: Buccal cells; Comet tail length; Telomere length.