Characterization of risk factors for DNA damage among paddy farm worker exposed to mixtures of organophosphates

ABSTRACT

This is a cross-sectional study conducted among paddy farmers to characterize potential risk factors that influence levels of DNA damage from exposure to mixtures of organophosphates. Comet assay was used to determine the level of DNA damage by measuring the comet tail length from the exfoliated buccal mucosa. The result suggests that farmers who chronically exposure to a mixture of organophosphates has at least 2-fold significant increase of DNA damage as compared with control group. Factor analysis and linear regression both suggest that DNA damage reported by farmers may influence individual, occupational, and residential factors and are reported as significant predictor factors, whereas this effect is mainly caused by individual factors among the control group. The findings of the present study suggest that either farmer or control group bear certain extent of genotoxic burden contributed by different risk factors.

Keyword: DNA damage; Comet assay; Organophosphate; Risk factors