“Primary DNA Damage (Comet Assay) in Relation to Genetic Polymorphisms for CYP1A1, EPHX and GSTM1 in Workers at a Graphite Electrode Manufacturing Plant”

This work presents supplementary data on the relationship between DNA damage and genetic polymorphisms for CYP1A1, EPHX and GSTM1 in workers exposed to PAH. The results show that DNA damage measured by comet assay was significantly higher in electrode workers than in reference subjects, it was the same for 1OHP. The findings of the present work support the evidence that occupational exposure to PAHs during graphite electrode manufacturing can result in primary DNA damage (strand breakage as evaluated with the comet assay). The evaluation of the association between occupational exposure to PAHs and DNA damage highlights an increased genotoxic risk with a statistically significant OR =2.59.

Surprisingly, smoking did not increase DNA damage in the exposed and the reference group. The same is with the genotypes analyzed; they had no influence on the damage measured by the comet assay. However, others found that DNA damage by benzo(a)pyrene is influenced by the smoking and GSTM1 polymorphisms (Rojas et al., Pavanello et al.). The absence of any effect found in this study is probably due to the use of comet assay to measure the DNA damage. It would be
of interest if the authors can measure in future benzo(a)pyrene-DNA damage in relation to the genetic polymorphisms in this group of workers exposed to high concentration of benzo(a)pyrene. I suppose that the results will be different. Dr Pavanello from Padova University can help the authors with the determination of BPDE-DNA adduct in the blood cells. The results of this work merit to be published. The paper is well written and presented. The authors can short the text and the references to 40-50, also one or two of the tables.