

[P-58]

URINARY PAH METABOLITES INFLUENCED BY GENETIC POLYMORPHISMS OF GSTM1 IN HOSPITAL INCINERATING WORKERSKyoung Ho Lee¹, Soo-Hun Cho¹, Inmi Choi² and Deahee Kang¹¹Department of Preventive Medicine, Seoul National University College of Medicine²Institute for Environmental Medicine, Medical Research Center, Seoul National University Seoul 110-799, Korea

Hospital waste incinerating workers are exposed to various pyrolysis products including polycyclic aromatic hydrocarbons (PAHs). We evaluated their exposure by assessing urinary 1-hydroxypyrene glucuronide (1-OHPG), as internal dose of PAH exposure. The potential effect of genetic polymorphisms of GSTM1/T1 involved in PAH metabolisms was also investigated.

Pre- and post-shift samples were collected from 28 hospital incinerating workers. Urinary 1-OHPG was assayed by synchronous fluorescence spectroscopy (SFS) after immunoaffinity purification using monoclonal antibody 8E11. Genotypes of GSTM1/T1 were assessed by PCR-based methods. Information on smoking habits and use of personal protective equipment were collected by self-administered questionnaire. The Kruskal-Wallis test was used to compare group means of these biomarkers.

Urinary 1-OHPG levels were not different in pre- and post-shift urine samples. Arithmetic mean concentrations of urinary 1-OHPG were 0.16 ± 0.04 umol/mol creatinine in pre-shift and 0.19 ± 0.08 umol/mol creatinine in post-shift. However, urinary 1-OHPG levels were significantly higher in individuals with the GSTM1 null genotype than with the GSTM1 present genotype ($p=0.05$, by Kruskal-Wallis test).

Our results suggest that the urinary 1-OHPG levels in hospital waste incinerating workers may be modulated by GSTM1 genotype. However, These findings remains to be confirmed in future studies involving larger sample sizes.

Keyword : Hospital incinerating, Polycyclic aromatic hydrocarbons, Glutation S transferase, 1-hydroxypyrene glucuronide