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Is exposure to dioxin (PCDD/Fs) a risk factor for metabolic syndrome?**Ping-Hsuan Huang and Hui-Tsung Hsu**
China Medical University, Taiwan

This cross-sectional study included 300 subjects aged 40 years or more, lived in Houli for more than 5 years. Houli has a municipal waste incinerator and a large electric arc furnace factory. They are considered to be the major emission sources of dioxin (PCDD/Fs). Previous epidemiological studies have shown that the relationship between exposure to PCDD/Fs and prevalence of Metabolic Syndrome (MS) is inconsistency. The purpose of this study is to evaluate the relationship between the levels of serum PCDD/Fs of the residents and the prevalence of MS. The health examination and questionnaire survey were conducted. Blood samples and urine samples were collected to determine serum PCDD/Fs and urinary 8-OHdG. In this study, the average plasma PCDD/Fs concentration of 300 subjects was 24.0 pg WHO2005-TEQ/g-lipid, which was higher than the level of non-occupational subjects in Taiwan. The burden of PCDD/Fs of serum PCDD/Fs was not associated with the prevalence of MS. However, the level of serum PCDD/Fs had a significant association with hyperglycemia. The third quartile of PCDDs, PCDFs and total PCDD/Fs were higher than the respective reference groups by 2.69, 2.17-2.29 times' higher risk of hyperglycemia. It suggested that exposure to PCDD/Fs is a risk factor for hyperglycemia. In addition, the results of this study showed that there was significantly increased trend for levels of urinary 8-OHdG as PCDFs exposure level increased. Our study supported the hypothesis that exposure to dioxin may cause the oxidative damage to DNA.

Biography

Ping-Hsuan Huang has completed his MS from China Medical University, School of Public Health. He is the Chair of Department of Health Risk Management, School of Public Health, China Medical University. He has published more than 25 papers in reputed journals.

hthsu@mail.cmu.edu.tw

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