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A total of 150 samples of paddy, brown and white rice (50 samples each) were collected from paddy fields and rice mills in Tanjung Karang, Selangor. These samples were analysed for the presence of imidacloprid residues. This study objective was to evaluate the non-carcinogenic risks on the population (n=552) who consumed rice produced in the area. The rice consumption patterns were determined through a community survey conducted among the Tanjung Karang population whom were sampled randomly. The population were divided into 3 age groups namely the children, adolescent and adult. The QuEChERS (quick, easy, cheap, effective, rugged, and safe) method of extraction coupled with Ultra High-Performance Liquid Chromatographic-UV (UHPLC-UV) analysis were carried out on the paddy and rice samples. Imidacloprid were detected in 10 samples of paddy, which made up about 20% of the paddy sample, 14% of the brown rice sample and 10% of the white rice sample. The mean concentration of imidacloprid in the paddy samples was 0.14 mg/kg, 0.04 mg/kg in the brown rice samples and 0.03 mg/kg in white rice samples. The calculated estimated daily intake (EDI) for adult, adolescent and children were 0.08 mg/kg, 0.03mg/kg and 0.0002 mg/kg body weight respectively. Result showed that 4% of the total samples exceeded the maximum residue limit (MRL) according to the Pesticides Act 1983. Through the health risk assessment, the hazard quotient (HQ) for the adults was 1.32 which showed that this group was exposed to non-carcinogenic risk through the rice consumption. Meanwhile, for the adolescent and children groups, they were not exposed to any health hazard as their HQ value was less than 1.

Key words: Imidacloprid; QuEChERS; Health Risk Assessment; UHPLC-UV

208 (Oral Presentation)

The association of ozone with preterm birth is stronger in women who develop gestational diabetes mellitus.

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Prenatal exposure to ambient air pollutants may cause adverse birth outcomes, but few studies have examined the association between air pollution and preterm birth after stratifying by pregnancy complications. We conducted a population-based case-control study of 1,510,064 singleton births from the Taiwanese birth registry during 2001 to 2007. From the total of 1,510,064 births, we took all preterm births (86,224) as the case group and then randomly selected a further 344,896 from the remaining births (equivalent to four normal births for every one preterm birth) as the sample. An inverse distance weighting approach was used to calculate an average exposure parameter for air pollutants. The

adjusted odds ratio for preterm birth per 10 ppb increase in ozone was, for women with gestational diabetes mellitus exposed in the third trimester, 1.12 (95% confidence interval: 1.01, 1.23) and in women without gestational diabetes was 1.02 (95% CI: 1.01, 1.03) (p for interaction < 0.001). These findings suggest that exposure to O₃ in pregnancy is associated with increased risk of preterm birth, particularly for women with gestational diabetes mellitus.

209 (Poster Presentation)

Gene-Environment Interaction between Catalase Polymorphisms and Environment Exposure on the Development of Allergic Rhinitis in Childhood

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Background: Allergic rhinitis is a highly prevalent inflammatory chronic disease affecting 40% of the children in Taiwan. Genetic susceptibility may interact with specific environmental factors in allergic disease development.

Objective: To assess the role of gene-environment interaction between catalase polymorphisms and environmental exposure (visible molds, mold odor, moisture in the surfaces, and water damage) on the development of allergic rhinitis.

Methods: We conducted a case-control study. Data on allergic rhinitis and environmental factors were collected using the ISSAC questionnaire from 858 children in Taiwan. The case group consisted of 263 children with allergic rhinitis and the control group (n=595). Genotyping was performed for rs1001179 and rs769214 polymorphisms and four indicators of exposures including histories of visible molds, mold odor, moisture in the surfaces, and water damage in children.

Results: We found that presence of visible molds, mold odor, and moisture in the surfaces increased the risk of current allergic rhinitis. Apparent joint effects between catalase promoter and indoor mold problem were observed on multiplicative scales. Specially, the risk of allergic rhinitis was significantly associated with children carrying the GG genotype and mold odor comparing with those carrying the AG genotype without any exposure indicator (adjusted odds ratio [aOR], 2.027; 95% confidence interval [CI], 1.255-3.275; P for interaction = 0.0058).

Conclusions: Our finding suggests that gene-environment interactions between the catalase (rs769214) and mold odor may play an important role in childhood allergic rhinitis.