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ASSOCIATIONS OF URINARY 5-METHYL-2¹-DEOXYCYTIDINE AND 5-HYDROXYMETHYL-2¹-DEOXYCYTIDINE WITH PHTHALATE EXPOSURE AND SEMEN QUALITY IN 562 CHINESE ADULT MEN

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5-Methyl-2¹-Deoxycytidine (5mdC) and 5-Hydroxymethyl-2¹-Deoxycytidine (5hmdC), products of DNA methylation and hydroxymethylation processes, have been detected previously in human urine, but their associations with environmental chemicals or healthy outcomes are unclear. The present poster explored the associations of urinary 5mdC and 5hmdC with phthalate exposure and semen quality. We assessed semen parameters including sperm concentration, motility and morphology, before measuring urinary 5mdC, 5hmdC and 13 phthalate metabolites among 562 subfertile men from Nanjing, China. Urinary 5mdC and 5hmdC were positively associated with the levels of low molecular weight phthalate metabolites (Low-MWP), high molecular weight phthalate metabolites (High-MWP) and the sum of all phthalate metabolites (Σ PAEs), respectively. Urinary 5mdC was associated with below-reference sperm concentration (odds ratios for increasing quartiles = 1.0, 2.2, 3.0, 2.0; p for trend = 0.02), sperm motility (1.0, 1.1, 1.9, 1.3; p for trend = 0.05) and sperm morphology (1.0, 1.4, 2.3, 1.5; p for trend = 0.05). Sperm concentration was associated with the highest quartile of urinary 5hmdC [odds ratio = 1.9 (95% CI: 1.1, 3.6)]. Our findings showed significant associations among urinary 5mdC and 5hmdC with phthalate metabolites and semen parameters, which suggested urinary 5mdC and 5hmdC promising biomarkers in future epidemiological studies.

Biography

Yitao Pan is a PhD candidate from Institute of Zoology, Chinese Academy of Sciences. His research focus on the epidemiological effect of phthalates, especially on male reproductive health. He has published two relevant papers in *Environment International* and *Journal of Hazard Material*.

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