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Phthalates Exposure in Children with Central Precocious Puberty (CPP) or Constitutional Delays in Growth

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Abstract : Endocrine-disrupting chemicals (EDCs) adversely affect the endocrine system. Phthalates, also called phthalic acid esters (PAEs), are manmade chemicals that are used as stabilizing agents in personal care products such as perfumes, lotions, and cosmetics. The aim was to explore whether PAEs exposure was associated with central precocious puberty (CPP) or constitutional delays in growth (CDGP). This case-control study included 48 female with CPP, 37 male with constitutional delays in growth, and 127 normal children and was conducted from December 2011 to August 2014. All participants completed a structured questionnaire regarding socio-demographic characteristics, lifestyle, and secondary sexual characteristics. The analytical method was based on ultra performance liquid chromatography-tandem mass spectrometry (UPLC-MS/MS) with isotope dilution for the quantitative detection of several phthalate metabolites in human urine. The risk of CPP with mep, mnbp, LMW >50th percentile were higher than those with 50th percentile were higher than those with <50 percentile in model 2. In model 1, we only found higher CDGP risk in mep, mnbp, and ΣPAEs. It shows that high phthalate exposure may associate with CDGP. In this case-control study, we found PAEs exposure was associated with central precocious puberty (CPP) or constitutional delays in growth.

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