Perinatal exposure to mixtures of endocrine disrupting chemicals reduces female rat follicle reserves and accelerates reproductive aging - DTU Orbit (27/12/2018)

Exposure to endocrine disrupting chemicals (EDCs) during development can have negative consequences later in life. In this study we investigated the effect of perinatal exposure to mixtures of human relevant EDCs on the female reproductive system. Rat dams were exposed to a mixture of phthalates, pesticides, UV-filters, bisphenol A, butyl-paraben, as well as paracetamol. The compounds were tested together (Totalmix) or in subgroups with anti-androgenic (AAmix) or estrogenic (Emix) potentials. Paracetamol was tested separately. In pre-pubertal rats, a significant reduction in primordial follicle numbers was seen in AAmix and PM groups, and reduced plasma levels of prolactin was seen in AAmix. In one-year-old animals, the incidence of irregular estrous cycles was higher after Totalmix-exposure and reduced ovary weights were seen in Totalmix, AAmix, and PM groups. These findings resemble premature ovarian insufficiency in humans, and raises concern regarding potential effects of mixtures of EDCs on female reproductive function.

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