Female offspring ovarian chemical metabolism protein abundance is altered by *in utero* atrazine exposure

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Atrazine (ATZ) is an endocrine-disrupting chemical, and low-dose ATZ exposure during perinatal development is linked to reproductive dysfunction and behavioral abnormalities in adulthood. Also, gestational ATZ exposure can lead to adverse outcomes, including low birth weight, delayed fetal growth, and delayed onset of puberty. To investigate the effects of ATZ exposure on female offspring, timed pregnant nulliparous sows were provided *ad libitum* access to water that contained an environmentally relevant concentration of ATZ (20 μg/L) or vehicle control [0.002% (v/v) ethanol]. Based on their estimated water intake and average body weight, treated sows were exposed to ATZ doses of ~0.0014 mg/kg BW. Piglets were exposed to control or ATZ *in utero* from gestation day 28 through farrowing and lactation (~127 days total). Sows were farrowed and allowed to nurse their piglets *ad libitum*. The abundance of chemical metabolism proteins in postnatal day 10 offspring ovaries (n = 3 per treatment) was measured using western blotting. Statistical analyses using unpaired t-test with no adjustment were performed using GraphPad Prism 8.4.1 software. Piglets exposed to ATZ had reduced levels of ovarian phase I biotransformation proteins CYP1A1, CYP1B1, and CYP2E1, and reduced phase III xenobiotic transporter, ABCB1 compared to the control group ($P < 0.05$). There was no effect ($P > 0.05$) of ATZ exposure on EPHX1 or GSTP1. The ovarian steroidogenic protein CYP11A1 was also decreased due to ATZ exposure ($P < 0.05$), with no impact observed in the level of CYP19A1 between the groups ($P > 0.05$). Overall, the study suggests that ATZ exposure during gestation and lactation can impair the ovarian abundance of chemical biotransformation proteins including those involved in steroidogenesis in the female offspring of *in utero* exposed pigs.