

P163. Pyrethroid Pesticide Exposure and Risk of Primary Ovarian Insufficiency in Chinese Women

C Li (CN) [1], M Cao (CN) [2], J Liu (CN) [3], J Zhou (CN) [4]

Pyrethroids are a class of widely used insecticides. Female animal studies suggested that pyrethroid exposure impaired ovarian function, which resulted in similar symptoms of primary ovarian insufficiency (POI). However, it is still unknown whether this association applies to women. In this case-control study, a total of 110 POI patients and 179 control women were recruited in Zhejiang, China. The urinary concentrations of metabolites of pyrethroids, 3-phenoxybenzoic acid (3-PBA) and 4-fluoro-3-phenoxybenzoic acid (4-F-3-PBA), as well as the serum concentrations of follicle-stimulating hormone (FSH), luteinizing hormone (LH) and anti-Mullerian hormone (AMH) were determined. The associations of pyrethroid metabolites with POI and POI-related hormones were accessed using unconditional logistic regression. Higher urinary levels of both 3-PBA and 4-F-3-PBA were significantly associated with increased risk of POI [adjusted odds ratio (OR) =2.235, 95% CI: 1.139-4.385 for the highest vs. lowest quartile of 3-PBA; OR=2.728, 95% CI: 1.162-6.403 for the highest vs. lowest quartile of 4-F-3-PBA]. Stratified analyses showed that each log increase in urinary 3-PBA concentration was significantly associated with an approximate 40% induction in odds of being in the highest quartile of FSH and LH levels, while a 31.9% reduction in odds of being in the highest quartile of AMH levels (All p for trend <0.05). To our knowledge, this is the first case-control study to report an association of pyrethroid exposure with increased risk of POI in women.

[1] Women's Hospital School of Medicine, Zhejiang University, [2] college of environmental and resource sciences, Zhejiang university, [3] college of environmental and resource sciences, Zhejiang university, [4] Women's Hospital School of Medicine, Zhejiang University

