Proceedings of the British Pharmacological Society at http://www.pA2online.org/abstracts/Vol18Issue1abst065P.pdf

Fetal effects of serotonin and noradrenaline reuptake inhibitor (SNRI) use in pregnancy

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Introduction: The concern for women taking a medication during pregnancy is an important consideration when providing care and data is limited; previous studies have described increased risk of preterm delivery[1] for example. The aim of this study was to determine whether there is an increased risk of adverse pregnancy outcomes for women who use SNRI antidepressants during pregnancy.

Method: This study utilised a prospective comparative cohort design using data obtained by the UK Teratology Information Service (UKTIS) between 1995 and 2017. Inclusion criteria required pregnancies to be singleton, without exposure to known or suspected teratogens (excluding alcohol) and without maternal poisoning/overdose exposures. SNRI exposed pregnancies were matched 1:3 with pregnancies exposed to selective serotonin reuptake inhibitors (SSRI) and 1:5 with non-teratogen exposed (NTE) pregnancies by maternal age and year of enrolment (+/- 3 years). Malformations were categorised using EUROCAT specifications by two study authors blind to maternal exposure status. Maternal demographics were compared using Chi-squared/Fishers exact tests, and odds ratios were computed using exact methods to compare crude pregnancy/fetal outcome rates.

Results: Of 320 pregnancies exposed to SNRIs during pregnancy, all included first trimester exposure, and were matched to 960 SSRI exposed and 1600 NTE comparator groups. We observed no significant difference in the rate of spontaneous abortion, elective termination or intrauterine death between exposed and comparator groups. However, the crude rate of live births was significantly decreased in the SNRI group compared with NTE (OR 0.690, 95% CI 0.545 to 0.932), but not with the SSRI group (OR 0.895, 95% CI 0.658 to 1.22). The risk of preterm delivery was significantly increased in SNRI pregnancies compared with the NTE group (OR 1.57, 95% CI 1.06 to 2.33); no such difference was observed when comparing SSRI exposed. A non-significant increase in major malformation risk was seen in the SNRI group compared with both comparator groups; half of the major malformations in the SNRI exposed were cardiac, showing a non-significant increase in comparison with both controls.

Conclusions: These data do not provide sufficient evidence of an increased risk of adverse pregnancy outcomes following SNRI exposure in human pregnancy, however due to the small sample size there is a limited ability to detect slight increases in adverse outcomes or rare events. Further research is therefore justified.

References:

1. Lennestål, R. & Källén, B. (2007). Delivery outcome in relation to maternal use of some recently introduced antidepressants. *Journal of Clinical Psychopharmacology, 27*(6), 607-613