

Determination of Cardiac Size and Function in a Prospective Study of SSRI Exposed Infants

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Background: Depression affects 14-20% of pregnancies and selective serotonin reuptake inhibitors (SSRIs) are the most commonly prescribed therapy for depression. SSRIs are now used in 10% of pregnant women in the United States. Previous studies have correlated SSRIs with cardiac malformations. Our prior animal data has demonstrated smaller left ventricular dimensions in sertraline exposed mice. We hypothesized in utero SSRI exposure will lead to smaller left ventricular dimensions on echocardiography.

Methods: Term infants, appropriate for gestation age, with or without exposure to SSRIs during pregnancy underwent echocardiograms within the first 2 days of life to assess cardiac size and function. Exclusion criteria for both groups included prematurity, requirement of support for respiratory or cardiovascular failure, and any major congenital malformations. Statistical analysis was performed by student's t-test.

Results: Twenty-one control newborns and 14 SSRI exposed newborns were enrolled in the study. There were no differences between the groups in birth weight, gestational age, body surface area, or day of life echocardiograms were performed. SSRI exposed infants were smaller in length compared to controls (SSRI exposed 50.4 ± 2.0 cm, controls 52.2 ± 2.0 cm, $p=0.03$). Although not statistically significant, there were trend towards decreased right ventricular diameters in diastole (SSRI exposed 0.91 ± 0.27 , controls 1.07 ± 0.22 cm, $p=0.08$) and left ventricular volumes in systole (SSRI exposed 1.40 ± 0.30 mL, controls 1.74 ± 0.65 mL, $p = 0.08$) in SSRI exposed infants. No differences were observed in cardiac function assessed by shortening fraction.

Conclusions: We found that SSRI exposed infants had smaller length. Additionally, infants with SSRI exposure demonstrated trends toward smaller right ventricular diastolic dimensions and left ventricular volumes in systole. The clinical significance of smaller cardiac dimensions and whether or not the findings are transient need to be determined. These findings suggest the need for closer monitoring of cardiac development in children exposed to SSRIs in utero.