PHARMACOGENETIC TESTING FOR CYP2D6 AND CYP2C19: CAN IT OFFER GUIDANCE FOR PREGNANT WOMEN TAKING SSRIS?

Research Objectives:
Depression during pregnancy affects 10-15% of women, and 5% of women take antidepressants during pregnancy. Clinical practice guidelines from the Clinical Pharmacogenetics Implementation Consortium provide recommendations for selective serotonin reuptake inhibitor (SSRI) drug choice and dose based on CYP2D6 and CYP2C19 genotype; guidelines are, however, based on evidence from non-pregnant cohorts. The aim of this study was to test the hypothesis that women with deleterious variants in these pharmacogenes taking SSRIs prenatally, would have more depression symptoms than women whose pharmacogenetic variants have been associated with normal SSRI metabolism.

Methods:
Comprehensive CYP2D6 and CYP2C19 genotyping utilized a range of methods, including gene copy number analysis, and was performed as secondary analyses on two longitudinal cohorts of pregnant women (N=83) taking SSRIs. The Kruskal-Wallis Test compared mean depression scores across four predicted metabolizer groups: poor (n=5), intermediate (n=10), normal (n=53), and ultrarapid (n=15).

Results:
There were no significant differences between mean depression scores across the four metabolizer groups (H(3)=.73, p=.87).

Conclusions:
Findings from this first, exploratory study of CYP2D6 and CYP2C19 pharmacogenetic variations in relation to depression symptoms and citalopram, escitalopram, and sertraline use in pregnancy do not support the clinical use of pharmacogenetic testing for antidepressant use during pregnancy, although these findings should be confirmed in larger cohorts. There is an urgent need for further research to clarify the utility of pharmacogenetic testing for pregnant women, as companies offering direct-to-consumer genetic testing continue to become more prominent and active in their marketing efforts.