Neuroactive Steroid Metabolism in Early Pregnancy Depression and Anxiety in Low-Income Women of Color



Abstract

Background

- Between 6.5%-12.9% of women experience perinatal depression (PND), with comorbid anxiety (PNA) in ~50% of cases^{1,2}.
- Rates are even higher in women of color (20% PND, 10% PNA)³.
- Progesterone (P4) and its neuroactive steroid (NAS) metabolites change across the perinatal period.
- Lower concentrations of Allopregnanolone (ALLO), a positive allosteric modulator at the $GABA_{\Delta}$ receptor, have been associated with perinatal depression in 3rd trimester and postpartum women^{4,5,6}.
- No studies have investigated this relationship in early pregnancy and in relation to anxiety in a diverse sample.

Aims

Aim: To investigate a variety of NAS in depressed or anxious, and non-depressed or anxious women at two early perinatal timepoints.

Methods

- 50 pregnant women (56% Black, 28% Latina) provided 2 blood samples for GC-MS analysis of NAS (positive allosteric modulators (ALLO, Pregnanolone) and negative allosteric modulators (Isoallopregnanolone and Epipregnanolone)).
- Ratios of these NAS to P4 served as a marker of NAS metabolism, the primary predictor variables.
- Women completed the CAT-MHTM which yielded diagnoses of MDD or GAD, the primary dependent variables, at 2 timepoints.



Visit 2: ~28 weeks gestatior

• Logistic mixed effects models assessed the relationship between NAS ratios and MDD/GAD.

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