A3.1: Psychoneuroimmunology: Preterm Birth in Hispanics

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Abstract:
Introduction: The Hispanic population is the fastest ethnic minority in the U.S., having a high fertility rate, and the potential for a high rate of preterm births (PTB). If the PTB rate continues to rise, it will have a devastating effect on children and increase medical costs. Purpose: To test a predictive model for PTB examining the effect of psychosocial and cultural factors on endocrine and immune responses.

Method(s): Design: Prospective, observational study of 470 pregnant Hispanic women, ages 14-40, primarily Mexican or Mexican-American, at 22-24 weeks gestation, with no medical complications and a singleton pregnancy. Methods: The sample was obtained from private physician offices, and public clinics in central, south and the gulf coast regions of Texas obtaining prenatal care. Acculturation was measured by a self-report questionnaire, the Language Proficiency Scale of the Bidimensional Acculturation Scale. Blood was drawn, separated, and plasma and serum levels were tested for Interleukin 1-Ra (IL-1Ra), Tumor Necrosis Factor Alpha (TNF-α), Corticotrophin Releasing Hormone (CRH), cortisol, progesterone and estriol. ELISA methodology was used to assay TNF-α, IL-1Ra, cortisol and progesterone and estriol. CRH was assayed by RIA. Medical record review was conducted prenatally, and after delivery, for gestational age. SEM analysis was conducted using M-Plus.

Results: The lower acculturated group (determined by principal components analysis) had a predictive pathway to PTB from TNF-α and IL-1Ra, to cortisol, to the progesterone/estriol ratio, predicting PTB. The high acculturation group had a different pathway to PTB, with IL-1Ra predicting CRH, then cortisol and PTB. The high acculturation group results indicate the
involvement of the hypothalamic-pituitary-adrenal axis (stress response) predicting PTB. All fit indices were excellent, CFI=1.0, TLI=1.0, RMSEA =.000. In addition, the CRH and cortisol were lower in the acculturated group, suggesting a blunted HPA axis response.

**Discussion & Conclusions:** Acculturation in Hispanic women may be an important risk for PTB. The biological mechanisms for PTB are different when considering the new immigrants versus the women who are born in the U.S, speak English, and have insurance. From this data, we may begin to develop a risk profile for PTB in Hispanic women.

**Abstract History:**
This abstract has not been presented or accepted for presentation in whole or in part at the SNRS or other scientific meeting.

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