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Background: Anxiety sensitivity (AS), or fear of anxious arousal, has been shown to predict posttraumatic stress symptoms (PTSS) after campus shootings and analogue traumas. Sexual assault (SA) disproportionately impacts women and often results in prolonged PTSS. The prospective association between AS and PTSS has not been evaluated in SA survivors.
Methods: Women SA survivors ≥18 years were enrolled at the time of emergency care. AS (ASI-3, abbreviated) and prior trauma exposure (LEC) were assessed one week after SA. PTSS severity (PCL-5) was evaluated one and six weeks after SA, and generalized linear modeling was used to evaluate the relationship between peritraumatic AS after SA and one- and six-week PTSS severity.
Results: A subset of SA survivors (n=52) from a larger cohort of SA survivors completed the ASI-3 one week after SA; 48/52 (92.3%) of these women completed six-week follow-up and constitute the study sample. Mean AS score at one week was 2.67 (SD=2.92), PCL-5 scores at one and six weeks were 47.30 (SD=18.19) and 41.17 (SD=19.91). AS predicted PTSS severity with a medium effect size ($F(1, 46)=5.36$, $p=0.025$, $\eta 2=0.10$). Among PTSS clusters, AS predicted increased re-experiencing ($F(1, 46)=4.86$, $p=0.033$, $\eta 2=0.10$) and negative alterations in cognition and mood ($F(1, 46)=4.59$, $p=0.038$, $\eta 2=0.09$). The relationship between AS and total PTSS persisted after adjusting for prior trauma exposure ($F(1, 46)=4.54$. $p=0.039$, $\eta 2=0.09$).
Conclusions: Heightened AS is associated with increased PTSS severity after SA. AS may be a useful target within cognitive-behavioral interventions for SA survivors to reduce PTSS and improve recovery.
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Keywords: Anxiety Sensitivity, Sexual Assault, Posttraumatic Stress, PTSD, Trauma

Peritraumatic Circulating 17β-Estradiol as a Resiliency Factor for Chronic Pain Outcomes in Women Following Trauma

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Background: Musculoskeletal pain is common following traumatic/stressful life events and is more common in women than men. However, resiliency factors that predict improved chronic posttraumatic musculoskeletal pain (CPMP) in women are poorly understood. In the current study, we examined whether peritraumatic circulating 17β-estradiol (E2) levels influence CPMP trajectories in women.
Methods: Peritraumatic E2 levels were measured via ELISA in plasma samples (n=167) derived from three multiethnic longitudinal cohort studies of trauma survivors. These cohorts enrolled individuals experiencing motor vehicle collision (MVC, n=89), sexual assault (n=64), and major thermal burn injury (n=14). CPMP (0-10 numeric rating scale) was assessed 6-weeks, 6-months, and 1-year following traumatic stress exposure. Repeated measures mixed models were used to test the relationship between log-transformed E2 levels and CPMP. Secondary analyses of MVC cohort gene expression data (n=37) evaluated mediating transcripts and associated biological pathways (Ingenuity, IPA).
Results: An inverse relationship between peritraumatic E2 and the development of CPMP was observed ($\beta = -0.353$, $p=0.033$) such that women with high E2 at the time of trauma had less CPMP over the following year. Secondary analyses identified 250 mRNA that mediated the relationship between E2 and CPMP; initial enrichment analyses identified eIF2 signaling as a top pathway through which E2 might influence CPMP development.
Conclusions: Increased peritraumatic E2 levels predict improved CPMP outcomes in women.
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Keywords: Chronic Pain, Trauma, Estrogen, Women, Sex Differences

Perturbation-Based Mapping of Subcallosal Cingulate With Deep Brain Stimulation: Cortical Oscillatory Dynamics to Confirm Target for Electrical Neuromodulation

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Background: Perturbation-based mapping is an emerging approach to the study of circuit dynamics in the living human brain. Pulses of deep brain stimulation (DBS) to the subcallosal cingulate (SCC) evoke a coherent and reliable cortical response, recorded on the scalp surface with dense array EEG, that may reflect endogenous network dynamics. As precision targeting within the SCC region has been linked to DBS treatment efficacy, we examined features of the cortical perturbation map that change when stimulation is delivered to different locations within the surgical target region.
Methods: Cortex-wide effects of stimulation to various locations in the SCC were recorded using dEEG in patients