

Tuesday, April 5, 2005

S-54. Symposium: Dissociation across the trauma spectrum - neurobiology and treatment issues

Chairperson(s): Eric Vermetten (CX Utrecht, Netherlands), Christian Schmahl (Mannheim, Germany)

14.15 - 15.45, Gasteig - Room 0.131

S-54-01

Neuroimaging of dissociative states in PTSD

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Objective: The goal of this study was to use functional connectivity analyses to assess inter-regional brain activity correlations during two different types of response (flashback/reliving and dissociative) to the recall of traumatic memories in traumatized subjects with and without posttraumatic stress disorder (PTSD).

Methods: 4.0 Tesla functional magnetic resonance imaging (fMRI) and functional connectivity analyses (psychophysiological interactions (PPI) (SPM99), were used to assess inter-regional brain activity correlations during script-driven symptom provocation in traumatized subjects with (n=22) and without (n=13) PTSD.

Results: Significant differences in functional connectivity were found between comparison subjects and both PTSD subject groups (flashback/reliving and the dissociative response). For PTSD with a flashback/reliving response, comparison of connectivity maps at coordinates [2, 20, 36] (right anterior cingulate gyrus) showed that control subjects exhibited greater correlation than the PTSD subjects in the left superior frontal gyrus (BA 9), left anterior cingulate gyrus (BA 32), left striatum (caudate), left parietal lobe (BA 40, 43), and left insula (BA 13). In contrast, PTSD subjects showed greater correlation than the comparison subjects in the right posterior cingulate gyrus (BA 29), right caudate, right parietal lobe (BA 7, 40), and right occipital lobe (BA 19). In the case of PTSD subjects with a dissociative response, connectivity maps at coordinates [-14, -16, 4] (left ventral lateral thalamic nucleus) showed that comparison subjects showed greater correlation than the dissociated PTSD subjects in the left superior frontal gyrus (BA 10), right parahippocampal gyrus (BA 30), and the right superior occipital gyrus (BA 19, 39). In contrast, comparison of connectivity maps revealed that dissociated PTSD subjects showed greater correlation than the comparison subjects in the right insula (BA 13, 34), left parietal lobe (BA 7), right middle frontal gyrus (BA 8), superior temporal gyrus (38, 34) and right cuneus (BA 19).

Conclusion: The differences in brain connectivity between PTSD (flashback/reliving response) and comparison subjects may account for the nonverbal nature of traumatic memory recall in PTSD subjects as compared to a more verbal pattern of traumatic memory recall observed in comparison subjects. Functional connectivity analysis for PTSD subjects with a dissociative response showed neural networks consistent with conveying

internal milieu and visceral signals to the brain, which can often be altered during states of dissociation.

S-54-02

Dissociative symptoms in patients with borderline personality disorder

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Objective: Dissociative symptoms are frequently observed in patients with borderline personality disorder (BPD) and often interfere with psychotherapeutic treatment processes.

Methods: We developed a questionnaire for the assessment of dissociative states and measured frequencies and intensities of dissociative symptoms as well as inner tension in patients with BPD and several psychiatric comparison groups. To explore pharmacological treatment options for dissociative symptomatology, we conducted trials of opioid antagonists in patients with BPD and severe dissociative symptoms.

Results: In the questionnaire, BPD patients had the highest dissociation scores as compared to other psychiatric disorders. There was a strong correlation between dissociative symptoms and inner tension in BPD patients. An open-label trial of naltrexone in flexible dosage between 50 and 100 mg per day revealed a reduction of the duration as well as the intensity of dissociative symptoms.

Conclusion: Dissociative symptoms appear to play a decisive role in patients with BPD. The endogenous opioid system is suggested to be involved in the generation of dissociative symptoms.

S-54-03

Current findings in neurobiology and treatment in traumatic dissociation

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Objective: The study of traumatic dissociation in science has a long and diverse theoretical and clinical history.

Methods: The past decade has seen an expansion of research into the long-term effects of traumatic stress on the brain and neurobiology in humans. Despite this the field is in its infancy; mainly since it witnessed a delay in achieving a consensus regarding the diagnostic formulation of the dissociative disorders.

Results: Apart from single case reports, brain imaging studies of dissociative disorders published in the literature are few. Brain regions such as the hippocampus that are sensitive to stress may mediate symptoms of dissociation. Recent studies suggest that the psychological experience of dissociation during stress is linked to the degree of HPA axis activity during and after stress exposure. The data also demonstrate a link between perceived physical health, hormones and dissociation. No established treatments for dissociative states or disorders are available. Medication trials in dissociative disorders have been similarly limited.

Conclusion: Only after these are established pharmacological as well as psychotherapeutic trials can then be conducted to develop and evaluate treatment options for dissociative symptoms and disorders.