Poster Presentation

**p548 - Neurophysiological correlates of dissociation in patients with psychogenic non-epileptic seizures: a functional MRI study**

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**Purpose:** To investigate whether patients with psychogenic non-epileptic seizures (PNES) differ from healthy controls in their resting-state functional connectivity characteristics, and whether these connections are associated with the tendency to dissociate.

**Method:** Eleven PNES patients without psychiatric comorbidity and twelve healthy controls underwent task-related (picture encoding and Stroop color naming paradigms) and resting-state functional MRI at 3.0T (Philips Achieva). Intelligence was tested using the Raven’s Matrices test and participants completed questionnaires evaluating their dissociation tendency. The study obtained ethical approval, and all participants gave informed consent. Functional MRI data analysis was performed in SPM8 routines in Matlab. Functional connectivity analysis on resting-state fMRI was based on seed regions extracted from task-related fMRI activation maps.

**Results:** The patients displayed significantly lower intellectual performance, and significantly higher dissociation scores. A random-effects analysis did not reveal any significant differences between the picture encoding and Stroop color-naming activation maps between controls and patients with PNES. However, functional connectivity maps from the resting-state fMRI were statistically different. For PNES patients, stronger connectivity values between areas involved in emotion (insula), executive control (inferior frontal gyrus and parietal cortex), and movement (precentral sulcus) were observed, which were also significantly associated with dissociation scores.

**Conclusion:** The abnormal strong functional connectivity found in patients with PNES hints at an underlying psychoform and somatoform dissociation mechanism where emotion can influence executive control, resulting in altered motor function (e.g. seizure-like episodes).

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