

## PW01-134 - LIMBIC AND PARALIMBIC CORTEX GREY MATTER DENSITIES ARE NEGATIVELY ASSOCIATED WITH TRAUMA LOAD

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**Objective:** There is converging evidence of gray matter (GM) structural alterations in different limbic structures in Post-Traumatic Stress Disorder (PTSD) patients. The aim of this study was to evaluate GM density in PTSD in relation to trauma load.

**Method:** Magnetic Resonance Imaging (MRI) scans of 21 subjects exposed to occupational trauma, who developed PTSD (S), and of 22 who did not (NS), were performed. The self-rated Trauma Antecedent Questionnaire (TAQ) was administered to assess lifelong trauma load and resilience. TAQ includes two scales ("trauma and neglect" TAQ-, and "resilience factors" TAQ+) further divided into four subscales measuring trauma load and resilience in four different age periods: zero to six, seven to twelve, thirteen to eighteen and adult. Regression analyses between the two sub-scales and GM density were performed on all 43 subjects by means of an optimized Voxel-Based Morphometry (VBM) analysis as implemented in SPM2.

**Results:** The analyses showed that GM density negatively correlated only with adult TAQ- in bilateral posterior cingulate, left anterior insula, and right anterior parahippocampal gyrus.

**Conclusions:** Irrespective of the PTSD diagnosis, trauma load was found to correlate with GM density in several limbic structures suggesting a high vulnerability of these structures to the effects of stress and trauma. These regions are implicated in integration, encoding and retrieval of autobiographical and episodic memories, emotional processing, interoceptive awareness and self-referential conscious experience. Thus, our study supports lower GM densities in limbic and paralimbic cortices as a potential structural basis for memory and dissociative dysfunction in PTSD.