The change of regional brain metabolism ([18]FDG PET) in panic disorder during the treatment with cognitive behavioral therapy or antidepressants.


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BACKGROUND: The goal of our study was to identify brain structures in patients with panic disorder (PD) that show changes in [18]FDG PET during the treatment with cognitive behavioral therapy (CBT) or antidepressants.

METHOD: Twelve patients suffering from panic disorder were studied with [(18)F]-2-fluoro-deoxyglucose positron emission tomography ([18]FDG PET) scanning during resting state (condition of random episodic silent thinking, REST). After PET examination patients were randomly assigned to either cognitive behavioral treatment group (6 patients) or antidepressants treatment group (6 patients). After a 3 month period (18)FDG PET examination was repeated in both groups. Psychopathology was assessed using the rating scales HAMA, CGI and Panic Disorder Severity Scale (PDSS). Data were analysed using software for statistical parametric mapping (SPM99). RESULTS: The scores of psychopathology rating scales (CGI, HAMA, PDSS) decreased in both groups. Changes of (18)FDG uptake in the pharmacotherapy group: decreases were found in the a priori hypothesized regions in the right hemisphere, in the superior, middle, medial and inferior frontal gyrus, superior and middle temporal gyrus, and increases were detected in the a priori hypothesized regions, mainly in the left hemisphere in medial and middle frontal gyrus, superior, middle and transverse temporal gyrus. Changes of (18)FDG uptake in the CBT group: decreases were found in the a priori hypothesized regions of the right hemisphere in the inferior temporal gyrus, superior and inferior frontal gyrus, and increases were detected in the a priori hypothesized region, mostly in the left hemisphere: inferior frontal gyrus, middle temporal gyrus and insula. We did not detect changes in (18)FDG uptake in the limbic region (hippocampus, parahippocampal gyrus and amygdala). CONCLUSIONS: Changes in brain metabolism ([18]FDG uptake) after the treatment either with CBT or with antidepressants were similar in number of brain areas, with prominent right-left
difference. This is in concordance with the asymmetry of brain activity noted in patients with PD according to previous PET (and SPECT) studies.

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