EPP0822

Functional connectivity between brain regions underlying executive control and language in schizophrenia patients with history of auditory verbal hallucinations

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Introduction: Schizophrenia patients with auditory verbal hallucinations (AVH) demonstrate impaired functional connectivity (FC) between brain regions, involved in executive functions and language. However, as most studies compare patients to healthy controls, the specificity of these findings either for schizophrenia in general or for AVH is unclear.
Objectives: We aimed to compare whole-brain resting-state FC of main language brain regions between schizophrenia patients with and without history of AVH and healthy controls.
Methods: Schizophrenia male patients with (n=31; mean age 29,8±11,6) or without history of AVH (n=16; 29±12,4) and 39 healthy male controls (30±8,9) underwent resting-state fMRI on 3T Philips scanner. No between-group differences in age, illness duration, and severity of clinical symptoms except AVH were revealed. Regions of interest (ROIs) were taken from the independent fMRI study with conventional language localizer and included left inferior frontal gyrus (l_IFG) and superior temporal gyri (STG) bilaterally. Whole-brain FC of each ROI was compared between groups (ANCOVA; p<.005 voxelwise; p(FDR)<.017 clusterwise, corrected for number of ROIs) with post hoc tests.
Results: Decreased FC between each STG (left and right) and anterior cingulate cortex (ACC) was revealed in all patients, compared to healthy controls. Patients with history of AVH, compared to other groups, showed decreased FC between l_IFG and ACC.
Conclusions: Disrupted fronto-temporal FC is non-specific for AVH and characterizes all schizophrenia patients. Patients with history of AVH have impaired FC between the l_IFG, underlying language production, and ACC, involved in differentiation between language production and comprehension. The study was supported by RFBR grant 18-013-01214.

Conflict of interest: The study was supported by RFBR grant 18-013-01214.
Keywords: schizophrénia; auditory verbal hallucinations; resting-state fMRI; functional connectivity

EPP0821

Relationship between cognitive functions and empathy in patients with neurocognitive deficit

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Introduction: Empathy is a social emotive skill that let to experience the same feelings of another person without being in the same situation. It changes during the growth becoming more over sophisticated with the involving of cognitive functions such as perspective taking (Hoffmann, 2000). Several researches observed a correlation between empathy and psychopathologies that involve cognitive functions such as attention and executive functions (Abdel-Hamid et al., 2019; Blair, 2018; Pijper et al., 2018) or decision-making (Francis et al., 2019).
Objectives: To investigate the impact of cognitive impairment on different empathy dimensions.
Methods: 80 subjects with severe neurocognitive deficit were examined. WAIS-R, neuropsychological battery and IRI test were performed.
Results: The impairment of perspective-taking dimension was significantly noticeable (=or<17/30). In addition, impairments of self-regulation process and inner-state monitoring mechanisms were also observed (=or<18/40).
Conclusions: According to previous researches, this study confirms that empathy can be reduced when cognitive functions are compromised by psychopathologies or other medical conditions. Personal distress and perspective taking are empathy dimensions more affected in these cases.

Keywords: cognitive functions; empathy; perspective taking; neurocognitive deficit

EPP0822

Lysergic acid diethylamide (LSD) promotes social behaviour through 5-HT_{2A} and ampa in the medial prefrontal cortex (MPFC)

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Introduction: Autism Spectrum Disorder and Social Anxiety Disorder are mental illnesses characterized by a dysfunction in social behavior (SB); a phenomenon largely mediated by the medial prefrontal cortex (mPFC). Clinical studies have demonstrated that lysergic acid diethylamide (LSD), a partial agonist of the 5-HT_{2A} receptor, can promote SB. However, its mechanism of action on SB is unknown.
Objectives: To assess the effects of repeated LSD administration on social behavior in mice and to identify which mPFC receptors mediate LSD's behavioral effects.
Methods: Eight-week-old C57BL/6J male mice received vehicle or repeated LSD (30 µg/kg/day i.p. for 7 days) as well the selective 5-HT_{2A} receptor antagonist MDL, or the AMPA receptor antagonist NBQX. Twenty-four hours following the last injection, mice underwent the Direct Social Interaction Test and the Three-Chamber Test (TCT) to assess sociability and preference for social novelty. in vivo electrophysiological recordings were performed in mice treated with vehicle or LSD using multi-barrelled electrodes for microiontophoretic ejections of the selective 5-HT_{2A} receptor agonist DOI or the selective AMPA receptor agonist quisqualate on mPFC pyramidal neurons.
Results: Repeated treatment with low doses of LSD increased the interaction time in the DSI as well as sociability and social novelty indices in the TCT. These pro-social effects were blocked by the