

论著

基于fMRI的早发精神分裂症患者静息态脑活动的局部一致性初步研究

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摘要:

目的: 探讨早发精神分裂患者在静息状态下脑活动局部一致性特点。方法: 采用第4版美国精神障碍诊断与统计手册修订版(diagnostic and statistical manual, fourth edition, DSM-IV-TR)诊断标准入组精神分裂症(或分裂样精神病)患者(年龄12~19岁)。采用功能磁共振成像(fMRI)技术,对18例早发精神分裂症患者和18例性别、年龄相匹配的正常对照受试者进行静息状态下全脑的磁共振脑功能扫描。利用局部一致性方法分析数据,用SPM5软件进行双样本t检验。结果: 与正常对照组相比,早发精神分裂症患者双侧前额叶内侧皮层(medial prefrontal cortex, MPFC)静息态脑活动的局部一致性降低($P < 0.001$, 体素 > 20); 未发现局部一致性增高脑区。结论: 早发性精神分裂症在静息状态下存在前额叶内侧皮层脑活动局域一致性异常, 这一异常改变可能与精神分裂症的病理机制相关。

关键词: 早发精神分裂症 磁共振成像 静息状态 局部一致性 默认网络

Primary study of resting state functional magnetic resonance imaging in early onset schizophrenia using ReHo

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Abstract:

Objective To explore the regional homogeneity of resting state brain activity in early onset schizophrenia using functional magnetic resonance imaging. Methods Schizophrenia or schizophreniform disorder was diagnosed according to DSM-IV-TR (diagnostic and statistical manual of mental disorders, fourth edition, text revision). A total of 18 adolescents with early-onset schizophrenia (EOS; onset of psychotic symptoms by age 18) and 18 age- and gender-matched healthy volunteers were tested in a resting-state fMRI scan. Regional homogeneity approach was used to analyze the functional imaging data, and statistical parametric mapping 5 (SPM5) was used to perform t-test in ReHo maps between the patients and controls. Results In comparison with the controls, the early-onset patients showed significantly decreased regional homogeneity in bilateral medial prefrontal cortex ($P < 0.001$, uncorrected; voxel > 20), but no brain regions showed significantly increased regional homogeneity in the patients.

Conclusion Regional homogeneity of resting state brain activities in EOS was decreased in bilateral medial prefrontal cortex. These abnormal changes may be involved in the psychopathology of schizophrenia.

Keywords: early onset schizophrenia; magnetic resonance imaging; resting state; regional homogeneity; default mode network

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