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抑郁症静息态脑功能异常及其与行为抑制/激活的关

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Title: Correlation of abnormal resting-state with behavioral inhibition/activation in patients with major depressive disorder

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关键词: 比率低频振幅; 静息态; 抑郁症; 磁共振成像

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摘要: 目的 分析抑郁症患者静息态功能磁共振成像技术结合比率低频振幅(fractional amplitude of low-frequency fluctuation,fALFF）指标，考察抑郁症患者脑结构和功能变化。 方法 选取2010年1月至2011年1月第三军医大学西南医院临床心理科和新桥医院神经内科收治的抑郁症患者10例，及同期正常对照组被试13例，利用fALFF分析抑郁症患者静息状态下脑功能异常特点及其与行为激活/抑制系统的关系。 结果 抑郁症组右侧小脑、左侧海马旁回、左额内侧回的fALFF值显著高于正常对照组，而左侧额中回、右侧额上回和右中央前回的fALFF值显著低于正常对照组(P<0.05)。对照组右侧小脑fALFF值和行为抑制（BIS）分数呈负相关 (r=-0.647,P=0.009)，左额内侧回fALFF值和行为驱力（BASD）分数呈负相关(r=-0.593,P=0.020)。抑郁症组左侧额中回的fALFF值和愉悦追求（BASF）分数呈正相关（r=0.605,P=0.049）。 结论 抑郁症患者在默认网络、情感调节环路等多个区域存在自发神经活动能量异常，且与行为抑制/激活功能异常相关。

Abstract: Objective To investigate the brain structure and function in the patients of major depression disorder (MDD) by resting-state functional magnetic resonance imaging (fMRI) and fractional amplitude of low-frequency fluctuation (fALFF).

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Methods Ten identified MDD patients and 13 healthy controls who were matched with the patients in the age, gender and educational level were enrolled in this study. They were scanned with 3.0T MRI scanner. fALFF was used for the features of resting-state brain function. The correlation of abnormal resting-state with behavioral inhibition/activation was investigated.

Results MDD patients exhibited significantly higher fALFF in right cerebellum, left parahippacampus, left medial frontal gyrus, and obviously decreased fALFF in left median frontal gyrus, right superior frontal gyrus and right precental gyrus than the normal control (P<0.05). In controls, fALFF of right cerebellum was negatively correlated with behavioral inhibition system (BIS, r=-0.647, P=0.009), and fALFF of left medial frontal gyrus was negatively correlated with behavioral activation system-drive (BASD, r=-0.593, P=0.020). In MDD patients, fALFF of left median frontal gyrus was positively correlated with behavioral activation system-fun seeking (BASF, r=0.605, P=0.049). Conclusion There exists abnormal fALFF pattern in MDD patients in default mode network and mood regulation circuit, with positive correlation with behavioral inhibition/activation.

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