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封面文章

抑郁症(major depressive disorder, MDD)是一种由多基因及环境因素交互影响、共同作用的精神疾病，以显著而持久的心境低落、快感缺乏、思维迟钝等为主要临床表现，往往具有较高的发病率、复发率以及自杀率。目前对于MDD的病理生理学机制尚未完全阐明，包括“神经递质假说”“下丘脑-垂体-肾上腺轴(hypothalamic-pituitary-adrenal, HPA)异常”“神经可塑性下降”“炎症”“大脑结构和功能变化”和“遗传易感性”等。其中“免疫-炎症”假说是MDD发病机制中的一个重要因素。

近年来，随着神经成像分析技术的发展，MDD最为突出的脑功能变化与情绪相关的高级皮层、皮层下多个脑区功能异常有关。促炎细胞因子可进入大脑与神经回路相互作用，增加MDD的风险，并涉及许多神经生物学过程，包括神经调节剂效应、神经递质样效应等。但目前对于深入探讨MDD患者脑功能层面与炎症细胞因子浓度相关的研究较少。本研究将基于MDD炎症假说和脑功能变化作为结合点，以静息态功能MRI(resting state functional MRI, rs-fMRI)中的低频振幅(amplitude of low-frequency fluctuation, ALFF)指标为切入点，与外周炎症细胞因子、临床量表进行相关性分析，探索MDD患者血液外周炎症因子水平和脑功能异常改变的复杂相互作用关系。详见内文第1页。

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About the cover

Major depressive disorder (MDD) is a psychiatric illness influenced by the interaction and combined effects of multiple genetic and environmental factors. Its primary clinical manifestations include significant and persistent mood depression, a lack of pleasure, and cognitive sluggishness. Often, it is characterized by a high incidence, recurrence rate, and suicide rate. Currently, the pathophysiological mechanisms of MDD remain incompletely understood, encompassing hypotheses such as the "neurotransmitter hypothesis" "hypothalamic-pituitary-adrenal (HPA) axis abnormalities" "reduced neuroplasticity" "inflammation" "changes in brain structure and function" and "genetic susceptibility". Among these, the "immune-inflammation" hypothesis is a significant factor in the pathogenesis of MDD.

In recent years, with the development of neuroimaging analysis techniques, the most prominent brain functional changes in MDD are associated with abnormalities in several brain regions, including the higher cortical and subcortical areas related to emotions. Pro-inflammatory cytokines can enter the brain and interact with neural circuits, increasing the risk of MDD and involving various neurobiological processes, including neuroregulatory effects and neurotransmitter-like effects. However, there is currently limited research on the in-depth exploration of the relationship between the brain's functional aspects in MDD patients and the concentration of inflammatory cytokines. This study will use the inflammation hypothesis of MDD and changes in brain function as a focal point, utilizing the amplitude of low-frequency fluctuation (ALFF) index in resting-state functional MRI (rs-fMRI) as a starting point. We will conduct correlational analyses with peripheral inflammatory cytokines and clinical scales to explore the complex interplay between the levels of peripheral inflammatory factors in the blood of MDD patients and abnormal changes in brain function. Please see text page 1.

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