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封面文章

帕金森病(Parkinson's disease, PD)是老年人最常见的神经退行性疾病之一。研究发现性别与神经退行性疾病的发病率和临床严重程度密切相关。男性PD的发病率明显高于女性,并且在临床表现、疾病进展、治疗反应和病理特征方面存在显著差异。快速眼动睡眠行为障碍(rapid eye movement sleep behavior disorder, RBD)是PD最常见的非运动症状之一,其严重影响患者的生活质量。PD患者中男性较女性中更易发生RBD,且伴随RBD的PD患者常疾病表现更严重,疾病进展更快。因此,深入理解伴随RBD的PD患者中性别特异性的神经病理学机制,对于制订个体化的诊疗策略具有重要意义。

临床症状通常与中枢神经系统的结构和功能变化密切相关,不同性别的患者可能存在特异性的脑结构改变模式。随着神经科学与网络科学发展,脑形态学在不同疾病阶段会表现出多样化的协同变化模式,这些模式与患者的临床症状密切相关。然而,大多数关于伴随RBD的PD患者研究主要集中在灰质体积的变化,对皮层形态学和网络层面区域之间的交互关联缺乏系统的分析。因此,亟需整合先前的研究结果,深入探讨伴随或不伴随RBD的男性和女性PD患者在结构和网络水平上的性别特异性变化。

鉴于此,我们计划通过脑皮层形态学研究,探讨伴随或不伴随RBD的PD患者性别特异性协变模式。我们的目标是深入理解RBD与性别特异性脑变化之间的联系,这将有助于更全面地阐明帕金森病的病理生理机制。同时将增强研究的科学合理性,为解释患者行为变化提供新的视角,并有助于开发个性化的诊断和治疗策略。详见内文第1页

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About the cover

Parkinson's disease (PD) is one of the most common neurodegenerative diseases in the elderly. Studies have found that sex is closely associated with the incidence and clinical severity of neurodegenerative diseases. The incidence of PD is significantly higher in males than in females, with notable differences in clinical manifestations, disease progression, treatment response, and pathological characteristics. Rapid eye movement sleep behavior disorder (RBD) is one of the most common non-motor symptoms of PD and significantly affects patients' quality of life. Male PD patients are more likely to develop RBD than female patients, and PD patients with RBD often exhibit more severe symptoms and faster disease progression. Therefore, a deeper understanding of the sex-specific neuropathological mechanisms in PD patients with RBD is crucial for developing individualized diagnosis and treatment strategies.

Clinical symptoms are often closely associated with structural and functional changes in the central nervous system, and patients of different sexes may exhibit distinct patterns of brain structural alterations. With advances in neuroscience and network science, brain morphology demonstrates diverse patterns of coordinated changes at different disease stages, which are closely related to patients' clinical symptoms. However, most studies on PD patients with RBD have primarily focused on changes in gray matter volume, lacking systematic analysis of cortical morphology and the interactive associations between regions at the network level. Therefore, it is essential to integrate previous research findings and further explore sex-specific structural and network-level alterations in male and female PD patients with or without RBD.

In light of this, we plan to investigate sex-specific covariation patterns in PD patients with or without RBD through cortical morphology analysis. Our goal is to gain a deeper understanding of the relationship between RBD and sex-specific brain alterations, which will contribute to a more comprehensive elucidation of the pathophysiological mechanisms of Parkinson's disease. Additionally, this study will enhance the scientific rationale of the research, provide new perspectives for interpreting patient behavioral changes, and facilitate the development of personalized diagnostic and therapeutic strategies. Please see text page 1.

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