

刘虎,范国光,徐克,孔令韬,汤艳清,刘盈.MRI观察精神分裂症静息态下小脑功能连接和解剖连接[J].中国医学影像技术,2011,27(1):20~26

MRI观察精神分裂症静息态下小脑功能连接和解剖连接

Altered resting-state functional connectivity and anatomical connectivity of cerebellum in schizophrenia

投稿时间: 2010-08-20 最后修改时间: 2010-10-14

DOI:

中文关键词: [精神分裂症](#) [小脑](#) [静息态](#) [磁共振成像](#) [扩散张量成像](#) [功能连接](#) [解剖连接](#)

英文关键词: [Schizophrenia](#) [Cerebellum](#) [Resting-state](#) [Magnetic resonance imaging](#) [Diffusion tensor imaging](#) [Functional connectivity](#) [Anatomical connectivity](#)

基金项目:

作者	单位	E-mail
刘虎	中国医科大学附属第一医院放射科,辽宁 沈阳 110001	
范国光	中国医科大学附属第一医院放射科,辽宁 沈阳 110001	fanguog@vip.sina.com
徐克	中国医科大学附属第一医院放射科,辽宁 沈阳 110001	
孔令韬	中国医科大学附属第一医院精神医学科,辽宁 沈阳 110001	
汤艳清	中国医科大学附属第一医院精神医学科,辽宁 沈阳 110001	
刘盈	中国医科大学附属第一医院精神医学科,辽宁 沈阳 110001	

摘要点击次数: 1014

全文下载次数: 469

中文摘要:

目的 应用静息态功能磁共振成像(fMRI)和扩散张量成像(DTI)观察精神分裂症患者与正常人小脑功能连接和解剖连接的差异。方法 分别对10例精神分裂症患者(精神分裂组)及14名健康对照者(正常对照组)行静息态脑fMRI和DTI。对数据进行后处理后得到功能连接的相关系数 r 值及小脑中脚的平均FA值,应用双样本 t 检验比较组间差异,并对两种数据进行相关性检验。结果 ①精神分裂组与左侧小脑功能连接改变显著的区域为双侧舌回、右侧额中回、双侧缘上回和左侧小脑($P<0.001$,未校正);与右侧小脑功能连接改变显著的区域为双侧舌回、左侧中央前回和左侧缘上回($P<0.001$,未校正);②精神分裂组左侧小脑中脚的FA值显著降低($P<0.05$);③精神分裂组右侧小脑-右侧舌回的连接强度与右侧小脑中脚的FA值呈显著正相关($r=0.84, P<0.05$)。结论 联合运用多种成像方式可能为理解小脑在精神分裂症病理生理学中的作用提供新的方向;精神分裂症患者静息态下小脑与大脑皮层某些区域的连接降低和小脑中脚局部白质纤维完整性受损的同时出现以及二者之间的相关性提示功能连接与解剖解剖之间存在密切关系。

英文摘要:

Objective To observe the differences of functional connectivity and anatomical connectivity of cerebellum between schizophrenic patients and normal controls with combining resting-state functional MRI (fMRI) and diffusion tensor imaging (DTI). **Methods** Both fMRI during rest and DTI were performed on 10 patients and 14 healthy subjects using GE 3.0 T Signa MR scanner. Resting-state functional connectivities of the bilateral cerebellum were separately analyzed with selecting seed regions in cerebellum. The integrity of white matter fiber in bilateral middle cerebellar peduncles was evaluated using fractional anisotropy (FA). Two sample t -test was used to detect differences between patients and normal controls, and correlation test was taken to analyze the correlation between the strength of functional connectivity and anatomical connectivity. **Results** ①Compared with controls, the left cerebellum showed reduced functional connectivities to some regions in patients, such as bilateral lingual gyrus, right middle frontal gyrus, bilateral supramarginal gyrus and left cerebellum ($P<0.001$, uncorrected). The right cerebellum also showed reduced functional connectivity to some regions in patients, such as bilateral lingual gyrus, left precentral gyrus and left supramarginal gyrus ($P<0.001$, uncorrected). ②The FA of the left middle cerebellar peduncle significantly reduced in patients ($P<0.05$). ③There was significantly positive correlation between the connective strength of right cerebellum-right lingual gyrus and the FA of the right middle cerebellar peduncle in patients with schizophrenia ($r=0.84, P<0.05$). **Conclusion** The multimodal imaging approaches presently used provide a new avenue to understand the role of cerebellum in the pathophysiology of schizophrenia. Meanwhile, the concurrence of the functional disconnection and damaged anatomical connectivity between the cerebellum and other regions in schizophrenia suggest that the functional-anatomical relationship need to be further investigated.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第6331741位访问者

版权所有: 《中国医学影像技术》期刊社

主管单位: 中国科学院 主办单位: 中国科学院声学研究所

地址: 北京市海淀区北四环西路21号大猷楼502室 邮政编码: 100190 电话: 010-82547901/2/3 传真: 010-82547903

京ICP备12000849号-1

本系统由北京勤云科技发展有限公司设计