

论文

轻度认知功能障碍与阿尔茨海默病患者小脑的MRI定量分析

陈丽, 张成琪, 王新怡, 杨志强

山东大学附属千佛山医院影像科, 济南 250014

摘要:

目的 探讨轻度认知功能障碍(MCI)和阿尔茨海默病(AD)患者的认知功能与小脑体积的相关关系。方法 MCI、AD患者及健康对照者各18例, 分别进行颅脑磁共振成像(MRI)扫描, 所得图像使用BRAINS2软件处理, 小脑被手绘分割成4部分(前叶、后叶上部、后叶下部和髓体), 比较各组患者小脑总体积及各亚区体积之间的差异, 采用简易认知状态检查表(MMSE)评分, 分析其相关性。结果 AD患者的小脑后叶较健康对照组明显萎缩, 并且小脑后叶下部的萎缩程度与其认知功能减退程度呈正相关, MCI组的小脑总体积及各亚区体积较健康对照组差异不明显。结论 小脑体积的MRI测量有助于AD的明确诊断, 小脑后叶体积萎缩是AD患者认知功能下降的关联因素。

关键词: 认知障碍; 阿尔茨海默病; 小脑; 磁共振成像

MRI quantitative analysis on cerebellum size in mild cognitive impairment and Alzheimer's disease patients

CHEN Li, ZHANG Cheng-qi, WANG Xin-yi, YANG Zhi-qiang

Department of Imaging, The Affiliated Qianfoshan Hospital of Shandong University, Jinan 250014, China

Abstract:

Objective To study the correlation between cognitive functions and volumetric measurements of the cerebellum in patients with mild cognitive impairment(MCI) and Alzheimer's disease(AD). Methods Magnetic resonance imaging(MRI) was performed on 18 patients with MCI, 18 with AD and 18 healthy controls. Cerebellar tracing was performed using the manual segmentation function implemented in the BRAINS2 software, and the cerebellum was divided into four substructures(anterior lobe, superior posterior lobe, inferior posterior lobe and corpus medullare).The total cerebellar volume and the volumes of cerebellar substructures were compared among the three groups, and the relevance between the cerebellar volume and scores on mini-mental state examination (MMSE) was analyzed. Results The volumes of posterior cerebellar lobes were significantly smaller in AD patients when compared with the healthy controls. In the AD group, atrophy of the inferior posterior cerebellar region was associated with poorer cognitive performance. In contrast, no significant difference was observed in the total cerebellar volume and the volumes of cerebellar substructures between subjects with MCI and the healthy controls. Conclusion Measurement of the cerebellum size by MRI is helpful in the diagnosis of AD, and atrophy of the posterior cerebellar region of AD patients is associated with their poorer cognitive performance.

Keywords: Cognition disorders; Alzheimer disease; Cerebellum; Magnetic resonance imaging

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通讯作者: 张成琪(1963-), 男, 教授, 硕导, 主要从事神经影像诊断学的研究。 E-mail: zcq200712929cl@yahoo.cn

作者简介: 陈丽(1982-), 女, 硕士研究生, 主要从事神经影像诊断学的研究。 E-mail: chenliqianfoshan@yahoo.cn

作者Email:

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