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动脉自旋标记灌注成像在病毒性脑炎急性期中的应用

Application of arterial spin labeling perfusion imaging for viral encephalitis in acute stage

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中文摘要:

目的 探讨3.0T MR动脉自旋标记(ASL)灌注成像在病毒性脑炎急性期中的应用价值。方法 收集病毒性脑炎患者30例(急性期组18例,非急性期组12例)及健康志愿者10名(对照组),行常规MR和血流敏感性交替反转恢复(FAIR)检查。在所得相对脑血流图上选取ROI,对脑炎患者测量脑实质病灶区及其镜像区的脑血流量,志愿者测量颅脑各个部位的脑血流量。分析急性期时病灶脑血流量(rCBF)的变化。结果 对所有患者均获得较清晰的相对脑血流图。急性期组大脑皮层灰质、岛叶病灶的rCBF值均高于非急性期组($P < 0.05$);其他区域病灶灌注无明显差异($P > 0.05$)。急性期组大脑皮层灰质、岛叶和海马病灶rCBF值均高于镜像区以及对照组($P < 0.05$);其他区域病灶与镜像区以及正常脑组织的rCBF值差异均无统计学意义($P > 0.05$)。结论 3.0T MR ASL灌注成像中,急性期病毒性脑炎位于大脑皮层灰质病灶、岛叶和海马病灶的灌注增高,此点能够为临床早期诊断和治疗提供帮助。

英文摘要:

Objective To explore the value of 3.0T MR arterial spin-labeling (ASL) perfusion imaging for viral encephalitis in acute stage. **Methods** Totally 30 patients with encephalitis (18 patients in acute period and 12 patients in non-acute period), as well as 10 healthy volunteers (control group) were enrolled and underwent conventional MR and flow sensitive alternating inversion recovery (FAIR). By selecting ROI in the relative cerebral blood flow (CBF) map, the regional CBF value was measured. ROIs in the lesions and the mirror areas in patients with encephalitis and normal brain tissue in volunteers were selected. Changes of CBF value of lesions in the acute stage were analyzed. **Results** Clear relative CBF maps were obtained in all patients. CBF value of the lesions locating at gray matter of cerebral cortex and insula in the acute stage group were higher than that of the non-acute stage group (all $P < 0.05$), but in lesions on the other regions had no statistical difference between the two groups (all $P > 0.05$). In the acute stage group, CBF value of the lesions locating at gray matter of cerebral cortex, insula and hippocampus were higher than that of the mirror areas and the controls group (all $P < 0.05$), but CBF value of other regions had no statistical difference among the acute period group, the mirror areas and the control group (all $P > 0.05$). **Conclusion** Lesions of encephalitis in the acute stage present hyperperfusion at gray matter of cerebral cortex, hippocampi and insula during 3.0T MR ASL perfusion imaging. This phenomenon is helpful for early diagnosis and treatment of this disease.

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