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同、反相位MRI诊断大鼠非酒精性脂肪肝

In-phase and out-of-phase MRI in the diagnosis of non-alcoholic fatty liver disease in rats

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中文摘要:

目的 探讨应用同、反相位MRI诊断大鼠非酒精性脂肪肝及评价脂肪肝病变程度的价值。方法 选取雄性Wistar大鼠40只,实验组30只,对照组10只,实验组采用高脂、高胆固醇喂养,对照组采用普通饮食,12周后行MRI、血脂生化及病理学检查,将两组的血脂生化指标及同、反相位MRI测得的肝脏脂肪分数(HFF)与病理结果进行比较及相关性分析。结果 实验组30只大鼠中脂肪肝1级5只,2级12只,3级13只,对照组10只均为0级;同、反相位MRI诊断脂肪肝的敏感度为100%(30/30),特异度为80.00%(8/10),准确率为95.00%(38/40)。实验组与对照组的血脂生化指标差异有统计学意义(P均<0.05),但在实验组不同分级脂肪肝间的差异均无统计学意义(P均>0.05)。同、反相位肝脏HFF与组织病理学测得的脂肪变肝细胞比例呈正相关(r=0.963)。结论 同、反相位MRI对诊断大鼠脂肪肝及判定脂肪肝病变程度具有较高价值。

英文摘要:

Objective To explore the value of in-phase and out-of-phase MR imaging in diagnosis and judgement the degrees of non-alcoholic fatty liver disease in rats. **Methods** Forty male Wistar rats were selected, 30 rats in experimental group were fed with high fat and high cholesterol food, while 10 rats in control group were fed with normal diet. All rats underwent MRI, lipid biochemical, and pathological examination after 12 weeks breeding. The biochemical indices, hepatic fat fraction (HFF) measured by MRI and histological findings were compared between in the two groups, and the correlation analysis was made. **Results** There were 5 rats in 1 grade, 12 rats in 2 grade and 13 rats in 3 grade fatty liver in experimental group, while all the rats in control group were in 0 grade. The sensitivity, specificity and accuracy of in-phase and out-of-phase MRI for diagnosis of fatty liver was 100% (30/30), 80.00% (8/10) and 95.00% (38/40), respectively. The lipid biochemical indicators had obvious differences between the experimental group and control group (all P<0.05), but there was no significant interclass difference in experimental groups (all P>0.05). The histological findings were linearly related with the quantitative liver fat content by MRI (r=0.963). **Conclusion** The in-phase and out-of-phase MR imaging has high value to diagnose and judge the severity of fatty liver of rats.

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