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• 外刊摘要 •

心脏 MR 标记序列的参数优化及 1.5T 与 3.0T 的志愿者对比研究

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目的:对比研究 1.5T 及 3.0T 梯度回波(GRE)MR 标记序列参数,测量信噪比(SNR)及对比噪声比(CNR),以优化参数和获在心肌、标记线、血液信号间最佳的图像对比。**方法:**14 例健康志愿者,男 8 例,女 6 例,平均 43.4±10.3 岁,分别用 1.5T 及 3.0T 全身成像系统进行扫描。在短轴位上,使用不同的反转角(8°~16°)、层厚(4~8 mm,此时固定反转角 1.5T 为 12°、3.0T 为 8°;固定标记网格为 8 mm)和标记网格(4~8 mm,此时固定反转角 1.5T 为 12°、3.0T 为 8°;固定层厚为 6 mm)对二维 GRE flash 标记序列进行评估。采集时间和时间分辨率(45 mm)保持不变。通过计算 SNR、CNR、心肌/标记线对比度

(RCMT)行图像的定性定量分析。**结果:**个体自身对比发现,层厚 6 mm、标记网格 8 mm、反转角 8°(3.0T)和 12°(1.5T)为最优图像扫描方案。与 1.5T(2.7±0.4)相比,3.0T 拥有更高的图像评分(3.2±0.2),且 CNR 与 RCMT 间有显著的相关性;CNR、SNR 及 RCMT 分别提高了 80%(10.7/6.1)、35%(20.6/15.3)及 35%(0.47/0.35)。**结论:**3.0T 心肌标记有更高的 SNR、CNR 及 RCMT,故其图像质量优于 1.5T。标记衰退可接近于心脏舒张期。

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