

赵晓斌, 史蓉芳, 唐坤, 赵健, 王颖, 刘晓程. 碱性成纤维细胞生长因子缓释支架联合骨髓间质干细胞治疗猪心肌梗死的心肌SPECT显像[J]. 中国医学影像技术, 2010, 26(3): 410-413

碱性成纤维细胞生长因子缓释支架联合骨髓间质干细胞治疗猪心肌梗死的心肌SPECT显像

Effect of intramyocardial controlled releasing base fibroblast growth factor stent combined with bone marrow-derived mesenchymal stem cells transplantation on cardiac repair in porcine acute myocardial infarction models

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英文关键词: [Bone marrow mesenchymal stem cells](#) [Base fibroblast growth factor](#) [Tomography, emission-computed, single photon](#) [Porcine](#)

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中文摘要:

目的 评价心肌SPECT显像对碱性成纤维细胞生长因子(b-FGF)缓释支架联合骨髓间质干细胞(BM-MSCs)移植治疗中国实验用小型猪急性心肌梗死的价值。方法 中国实验用小型猪18头,按完全随机法分为3组:机械打孔+空白支架(对照组)、机械打孔+b-FGF支架(单纯治疗组)、机械打孔+b-FGF支架+BM-MSCs(联合治疗组)。所有猪左前降支均被结扎制作心肌梗死模型。3组均在梗死区及周边区机械打孔并分别埋入空白支架、b-FGF支架、b-FGF支架+BM-MSCs;术后行心肌SPECT显像检测心肌血流的变化,同时还进行超声心动图、免疫组化检查。结果 术后6周,治疗组梗死心肌质量差值、短轴缩短率、新生血管密度均高于对照组($P<0.05$),且联合治疗组高于单纯治疗组($P<0.05$)。结论 b-FGF缓释支架联合BM-MSCs能够改善心肌梗死区域血流、促进血管生长、提高心功能;心肌SPECT显像是评估碱性成纤维细胞生长因子缓释支架联合骨髓间质干细胞治疗急性心肌梗死效果有价值的方法。

英文摘要:

Objective To evaluate the therapeutic effect of intramyocardial controlled releasing base fibroblast growth factor (b-FGF) stent combined with transplanting bone marrow-derived mesenchymal stem cells (BM-MSCs) in porcine acute myocardial infarction (AMI) models. **Methods** Eighteen porcines were divided into three groups (each $n=6$): transmyocardial revascularization (TMR)+naked stent (control group), TMR+b-FGF stent (b-FGF group) and TMR+b-FGF stent+BM-MSCs (b-FGF+BM-MSCs group). Acute myocardial infarction models were induced by ligating the left anterior descending artery in 18 porcine. In the control and b-FGF group, naked stents, b-FGF stents and b-FGF stent+BM-MSCs were implanted into TMR channels in the infarct and border zone. ^{99m}Tc -methoxyisobutylisonitrile (MIBI) myocardial perfusion imaging were performed to evaluate changes in myocardial blood flow, and echocardiography and immunohistochemical studies were also performed. **Results** After 6 weeks, the quality of myocardial infarction, fractional shortening, neovascular density in b-FGF and b-FGF stent+BM-MSCs group were higher than those of control group ($P<0.05$), and in b-FGF stent+BM-MSCs group was higher than those in b-FGF group ($P<0.05$). **Conclusion** BM-MSCs combined with controlled releasing intramyocardial b-FGF stent can improve the flow of myocardial infarction area, promote angiogenesis and heart function, and the therapeutic effect which can be evaluated with myocardial SPECT imaging.

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