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多功能心腔内导管移植骨髓干细胞治疗犬心肌梗死

Transendocardial bone marrow-derived mesenchymal stem cells injection after myocardial infarction in canine with multifunctional intracardiac catheter

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英文关键词: [Catheters](#) [Myocardial infarction](#) [Transendocardial injection](#) [Mesenchymal stem cells](#)

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作者	单位	E-mail
杨亚	重庆医科大学附属第二医院心血管内科, 重庆 400010	
黄晶	重庆医科大学附属第二医院心血管内科, 重庆 400010	huangjing_9901@yahoo.com.cn
钱俊	重庆医科大学附属第二医院心血管内科, 重庆 400010	
郭睿	重庆医科大学附属第二医院心血管内科, 重庆 400010	
蔡恒辉	汕头超声仪器研究所, 广东 汕头 515041	
杨金耀	汕头超声仪器研究所, 广东 汕头 515041	
成正辉	湖南埃普特医疗器械有限公司, 湖南 湘乡 411400	

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中文摘要:

目的 观察多功能心腔内导管经心内膜移植骨髓间充质干细胞(MSCs)治疗心肌梗死(MI)的可行性及疗效。方法 采用密度梯度离心法获得犬MSCs。结扎犬左冠状动脉前降支建立MI模型,1周后将建模成功的动物随机分成移植组和对照组,每组6只,移植组注射0.2 ml MSCs,对照组注射等量的磷酸盐缓冲液。细胞移植4周后,以超声心动图检测心功能变化,之后取心肌组织作石蜡切片,用HE和Masson三色染色法显示MI区的组织结构。结果 多功能心腔内导管能显示心腔内解剖结构,并能监控注射针位置。心功能检测和组织学染色显示移植组较对照组左心室射血分数增高,而心肌纤维化程度减低。结论 多功能心腔内导管移植MSCs治疗犬MI能改善心功能,减少心肌纤维化。

英文摘要:

Objective To explore the feasibility and effect of transendocardial bone marrow-derived mesenchymal stem cells (MSCs) injection after myocardial infarction (MI) in canine with multifunctional intracardiac catheter. **Methods** MSCs were isolated from the bone marrow of canine by density gradient centrifugation. MI models of canine were built by ligating left anterior descending artery. One week after model building, 12 survived animals were randomly divided into the transplantation group and control group (each $n=6$). Canines in the transplantation group received 0.2 ml transendocardial injection of MSCs, while in the control group received equal volume phosphate buffer solution. Four weeks after MSCs transplantation, cardiac function was assessed with echocardiography. The heart was removed and morphological changes of scar tissue were examined with HE staining and Masson trichrome staining. **Results** The multifunctional intracardiac catheter showed the anatomic structure and monitored the position of the needle in the myocardium. Compared with control group, left ventricular ejection fraction was significantly higher, while degree of myocardial fibrosis was significantly lower in transplantation group. **Conclusion** Transendocardial MSCs injection after MI in canine using these multifunctional intracardiac catheter can improve heart function and reduce myocardial fibrosis.

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地址:北京市海淀区北四环西路21号大猷楼502室 邮政编码:100190 电话:010-82547901/2/3 传真:010-82547903

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