

骨髓间充质干细胞对SD大鼠离体肝切除自体肝移植肝功能的保护作用(PDF)

《第三军医大学学报》[ISSN:1000-5404/CN:51-1095/R] 卷: 34 期数: 2012年第09期 页码: 857-861 栏目: 论著 出版日期: 2012-05-15

Title: BMSCs implantation protects liver function in SD rats after extracorporeal hepatectomy and orthotopic liver autotransplantation

作者: 徐士炳; 张玉君; 谭嘉鑫; 刘炜; 别平
第三军医大学西南医院全军肝胆外科研究所

Author(s): Xu Tubing; Zhang Yujun; Tan Jiaxin; Liu Wei; Bie Ping
Institute of Hepatobiliary Surgery, Southwest Hospital, Third Military Medical University, Chongqing, 400038, China

关键词: 离体肝切除; 自体肝移植; 骨髓间充质干细胞; 肝细胞凋亡

Keywords: extracorporeal hepatectomy; orthotopic liver autotransplantation; bone mesenchymal stem cells; hepatocyte apoptosis

分类号: R-332; R617; R657.3

DOI: -

文献标识码: A

摘要: 目的 探讨骨髓间充质干细胞(BMSCs)对大鼠离体肝切除自体肝移植肝功能的保护作用,寻找可能的机制。 方法 采用生化、TUNEL、Western blot等方法检测离体肝切除自体肝移植术后大鼠不同时间点的血清及肝脏组织标本。取SD大鼠骨髓体外培养BMSCs,纯化后GFP标记,第3代做检测并配置成细胞悬液,建立SD大鼠离体肝切除自体肝移植模型,分为BMSCs注射组(BMSCs悬液门静脉注入)和生理盐水注射组(等量生理盐水门静脉注入)行离体肝切除自体肝移植手术,观察术后大鼠状态,检测大鼠肝功能、肝细胞凋亡,TGF- β 1及Bcl-2、bax表达情况。 结果 成功分离培养BMSCs并鉴定。BMSCs注射组术后大鼠死亡率低于生理盐水注射组,BMSCs注射组术后12、24、48、72 h肝功能明显好于生理盐水注射组,肝细胞凋亡率低于生理盐水注射组。BMSCs注射组TGF- β 1、bax水平较生理盐水注射组减少,Bcl-2较生理盐水注射组增高,其中bax下调、Bcl-2上调有显著性差异($P<0.05$),而TGF- β 1在24、72 h无显著性差异。 结论 BMSCs能通过直接门静脉注入肝改善离体肝切除自体肝移植大鼠术后肝功能,其可能通过影响Bcl-2/bax值减少肝细胞凋亡,可能是通过TGF- β 1无关的其他途径。

Abstract: Objective To determine the protective effect of bone marrow mesenchymal stem cells (BMSCs) implantation in SD rats after extracorporeal hepatectomy and orthotopic liver autotransplantation. Methods SD rat BMSCs were isolated, cultivated and purified, and then labeled with green fluorescent protein (GFP) by lentivirus vector pLV.EX2d.P/hygro-EF1A>EmGFP. Then the cells at passage 3 to 5 was adjusted into cell suspension of 2×10^6 cells/ml. A total of 70 SD rats were randomly divided into BMSCs group ($n=30$), normal saline group ($n=30$) and sham operation group ($n=10$). The rats from the former 2 groups received extracorporeal hepatectomy and orthotopic liver autotransplantation (left liver lobe was resected), and then the rats from BMSCs group were given BMSCs transplantation through portal vein, and those from normal saline group were injected with normal saline. The rats were sacrificed in 12, 24, 48, 72 and 168 h respectively. Serum and liver tissue specimens were collected and tested by the biochemistry, TUNEL and Western blot analysis for liver function, hepatocyte apoptosis and serum levels of TGF- β 1, Bcl-2, and bax. Results BMSCs were successfully cultured and identified. Compared with the normal saline group, BMSCs transplantation resulted in a lower postoperative mortality, significantly better postoperative liver function in 12, 24, and 72 h, and significantly decreased hepatocyte apoptosis. Expression of TGF- β 1 at protein level was significantly decreased in 24 h, but not in 24 and 72 h, while that of bax was significantly increased and that of Bcl-2 was significantly increased in all above 3 time points ($P<0.05$). Conclusion Portal vein implantation of BMSCs improves postoperative liver function in SD rats after the extracorporeal hepatectomy and orthotopic liver autotransplantation, through influencing Bcl-2/bax ratio to attenuate hepatocyte apoptosis, and possibly through TGF- β 1 noncorrelation pathway.

参考文献/REFERENCES

徐士炳, 张玉君, 谭嘉鑫, 等. 骨髓间充质干细胞对SD大鼠离体肝切除自体肝移植肝功能的保护作用[J]. 第三军医大学学报, 2012, 34(9): 857-861.

备注/Memo: -

更新日期/Last Update: 2012-05-07

导航/NAVIGATE
本期目录/Table of Contents
下一篇/Next Article
上一篇/Previous Article
工具/TOOLS
引用本文的文章/References
下载 PDF/Download PDF(1322KB)
立即打印本文/Print Now
推荐给朋友/Recommend
查看/发表评论/Comments
统计/STATISTICS
摘要浏览/Viewed 47
全文下载/Downloads 21
评论/Comments

RSS XML