

论著

转染VEGF165基因抑制兔动脉损伤后内膜增生

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摘要 目的: 观察局部转染血管内皮生长因子165 (VEGF165) 基因对损伤动脉内膜增生的影响并探讨可能机制。方法: 采用显微外科手术方法, 建立兔右髂外动脉损伤模型。将105只新西兰大白兔随机分为3组, 每组35只。A组为生理盐水对照组, B组为脂质体介导的pBudCE4.1转染组, C组为脂质体介导的pBudCE4.1/VEGF165转染组。用微注射器将各种转染液注入损伤的血管壁, 每组按实验终点(术后2、3、7、14和28 d)分为5个亚组, 每个亚组7只兔。于术后各实验终点, 取损伤段的血管用于病理组织学检查、电镜观察、RT-PCR和免疫组化染色检查。结果: 术后各时点C组血管内膜厚度和内膜面积均显著小于A组和B组 ($P < 0.01$), 术后28 d时C组管腔狭窄率平均比A组和B组低51.6%和49.8%。术后各时点C组血管壁的VEGF165基因的mRNA表达量和血管壁VEGF165阳性细胞率明显高于A组和B组 ($P < 0.01$)。C组血管壁血管内皮细胞(VEC)修复和生长增殖速度明显快于A组和B组。A组和B组间无明显差异。结论: 局部转染VEGF165基因可抑制血管新生内膜增生及血管再狭窄, 为将来血管内膜增生的基因治疗奠定基础。

关键词 [内皮生长因子](#); [基因](#); [内膜增生](#); [缩窄, 病理性](#)

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Inhibitory effects of local transfection of vascular endothelial growth factor 165 gene on intimal hyperplasia of artery in rabbits after operation injury

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Abstract

AIM: To observe the effects of local transfection of vascular endothelial growth factor 165 (VEGF165) gene on inhibiting intimal hyperplasia and restenosis of artery in rabbits after operation injury, and its possible mechanisms. METHODS: Microsurgery injury was used to establish the intimal injury model of right external iliac artery in rabbits. 105 male New Zealand rabbits were randomly divided into 3 groups (35 rabbits in each group). Group A was physiological saline control group, group B was pBudCE4.1-transfected group, group C was pBudCE4.1/VEGF165-transfected group. The physiological saline, pBudCE4.1 and pBudCE4.1/VEGF165 transfection solutions were injected into injured vessel walls of above-mentioned groups. The injured vascular specimen was harvested for pathologic examination, electric microscope observation, RT-PCR examining and immunohistochemical staining. RESULTS: Rabbit intimal thickness and area of vessel walls in group C at every time point after operation were significantly less than those in group A and group B ($P < 0.01$). The stenosis ratio of vessels in group C at 28 days after operation decreased by 51.6% and 49.8%, respectively, as compared with groups A and B. The expression of VEGF165 mRNA and VEGF165 positive cells in Group C were increased significantly than those in group A and B at every time point after operation ($P < 0.01$). CONCLUSION: Local transfection of VEGF165 gene restrains intimal hyperplasia and restenosis of vessels, which lays a foundation for future gene therapy of vascular intimal hyperplasia.

Key words [Endothelial growth factors](#) [Genes](#) [Intimal hyperplasia](#) [Constriction](#) [pathologic](#)

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