

论著

缺血后处理对移植犬肺功能的影响

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摘要 目的: 观察缺血后处理对移植犬肺的呼吸功能的影响。方法: 随机选取12对比咯犬, 组成供受体, 进行异体左侧单肺移植术。随机分成2组, 对照组: 6对犬, 进行供受体左侧异体单肺移植, 不予缺血后处理的干预, 按常规方式进行; 缺血后处理组: 6对犬, 进行供受体左侧异体单肺移植, 常规方式获取的供体犬肺植入后, 再灌注早期实施3个周期的10 s再灌-10 s再阻断, 总时程1 min的缺血后处理。肺移植术后0 h、1 h、2 h、4 h时点观察移植肺的血流动力学、气体交换功能; 肺移植术后4 h肺湿/干重比; 光镜下观察供体犬肺2 h、4 h时点肺组织的病理变化。结果: 手术无1例失败, 均存活。供体肺脏植入时间平均(5.9±1.7) min。与对照组比较, 缺血后处理组的移植犬肺的平均肺动脉压(MPAP)和肺血管阻力指数(PVRI)降低, 差异显著(P<0.05); 而平均体循环血压(MSAP)和体循环阻力指数(SVRI)无显著差异(P>0.05)。气体交换方面与对照组比较, 缺血后处理组的动脉血氧分压(PaO₂)升高, 肺泡-动脉血氧分压差(PA-aO₂)及肺内动静脉分流(QS/QT)减低, 差异显著(P<0.05); 而动脉血二氧化碳分压(PaCO₂)无显著差异(P>0.05)。缺血后处理组的移植犬肺湿/干重比与对照组比较, 差异显著(P<0.05)。组织光镜下观察在各时点的炎症反应均比对照组的变化轻微。结论: 缺血后处理可以减轻供体肺的缺血再灌注损伤, 改善供体肺功能。

关键词 [肺移植](#); [缺血后处理](#); [肺功能](#)

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Effect of ischemic postconditioning on functions of transplanted lung in canine

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Abstract

AIM: To investigate the protective effect of ischemic postconditioning on the functions of canine transplanted lung. METHODS: Twelve cases of the orthotopic left lung transplantation were performed in 24 canines, which were randomly divided into ischemic postconditioning group and control group averagely. Before the reperfusion of lung donors in the canines of ischemic postconditioning group, the ischemia post-conditioning protocol was performed as follows: 10 s reperfusion with 10 s blockade afterwards, and the protocol was performed for 3 cycles. The canines in control group, without intervention of postconditioning, were processed normally. Firstly, the hemodynamics and the graft's gas exchange and oxygenation were assessed at 0 h, 1 h, 2 h and 4 h after reperfusion. Then, the lung graft was harvested for measuring the wet/dry weight ratio after 4 h reperfusion. Finally, the freshly-obtained pulmonary specimens at 2 h and 4 h after reperfusion were collected and prepared for pathologic observation under microscope with HE staining. RESULTS: The transplantations were completed in 12 canines, the mean time for anastomoses was (35.9±1.7) min. Compared to control group, MPAP and PVRI were improved significantly in I-postC group (P>0.05), and there was no significant difference in MSAP and SVRI between two groups (P>0.05). Compared to control group on the hand of gas exchange and oxygenation, PaO₂, PA-aO₂ and QS/QT improved significantly in I-postC group (P<0.05), however no significant difference in PaCO₂ between two groups was observed (P>0.05). Meanwhile, there were significant differences between two groups in wet/dry weight ratio (P<0.05). Under the light microscopic examination, the changes of pathologic inflammation in the ischemic postconditioning group were less than those in control group. CONCLUSION: Ischemic postconditioning effectively improves the respiratory functions by attenuating lung ischemic reperfusion injury.

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