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论著

不同潮气量机械通气对大鼠肺组织Bax和Bcl-2表达及凋亡的影响

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摘要：

目的：探讨不同潮气量（tidal volume,Vt）机械通气对大鼠肺组织Bax和Bcl-2表达及凋亡的影响。方法：将24只健康SD大鼠随机分成4组：对照组、低潮气量组、中等潮气量组和大潮气量组。对照组保留自主呼吸，其余组分别以不同潮气量（10，20，40 mL/kg）机械通气2 h，通气结束后24 h观察大鼠肺组织病理学改变、肺湿干比（W/D）、肺泡灌洗液（BALF）中白细胞计数、免疫组织化学法观察肺组织Bax和Bcl-2蛋白表达及评分、TUNEL染色情况。结果：与对照组比较，大、中潮气量组W/D值、BALF中白细胞计数、病理学评分、Bax蛋白表达及凋亡率（AI）均显著增加，而Bcl-2表达明显减少（P＜0.05）。与对照组相比，低潮气量组以上指标无明显变化（P＞0.05）。结论：低潮气量机械通气不引起肺损伤；较大潮气量机械通气引起肺损伤，可能与增加肺组织Bax和减少Bcl-2的表达，促进靶细胞凋亡有关。

关键词： 机械通气 凋亡 Bax Bcl-2

Effect of different tidal volume ventilation on apoptosis and the expression of Bax and Bcl-2 in rat lungs

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Abstract:

ObjectiveTo determine the effect of different tidal volume(Vt) ventilation on apoptosis and the expression of Bax and Bcl-2 in rat lungs. MethodsTwenty-four healthy SD rats were randomly divided into 4 groups: a control group, a low Vt ventilation group （LV）, a middle Vt ventilation group （MV）, and a high Vt ventilation group （HV）. Rats were subjected to different tidal volumes（10，20，and 40 mL/kg）for 2 h except the control group, which kept their own breath. We determined the lung histopathology score, W/D ratio and WBC in bronchoalceolar lavage fluid (BALF) to evaluate the lung injury and examine the apoptotic cell death, Bax and Bcl-2 protein expression by using TUNEL technique and immunohistochemistry 24 h after the operation. ResultsCompared with the control group, MV and HV increased lung histopathology score, W/D ratio, WBC in BALF, apoptosis index （AI ）and Bax protein expression, but decreased Bcl-2 protein expression (P＜0.05). These changes showed no significant difference between the control group and the low Vt ventilation group (P＞0.05). ConclusionLow Vt ventilation contributed little to apoptosis. Higher Vt ventilation can improve Bax while inhibit Bcl-2 expression to aggravate apoptosis in rat lungs.

Keywords: mechanical ventilation；apoptosis；Bax；Bcl-2

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以肺部感染控制窗为切换点进行有创-无创序贯治疗在COPD呼吸衰竭中的应用

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