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大环内酯类药联合糖皮质激素促进哮喘大鼠嗜酸性
享到：

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Title: Eosinophil apoptosis induced by macrolides combined with glucocorticoids in asthmatic rats

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关键词: 哮喘; 大鼠; 大环内酯类药; cleaved caspase-9; Bak

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摘要: 目的 研究大环内酯类药联合糖皮质激素对哮喘大鼠肺组织的支气管肺泡灌洗液（bronchoalveolar lavage fluid，BALF）中嗜酸性粒细胞（eosinophil,EOS）凋亡相关蛋白cleaved caspase-9、Bak表达的影响。 方法 以卵白蛋白致敏制作大鼠哮喘模型，将大鼠分为5组：对照组、哮喘模型组、干预组A_1（红霉素）、干预组A_2（地塞米松）、干预组A_3（红霉素+地塞米松）组，每组10只。并对其BALF中嗜酸性粒细胞进行计数，TUNEL法检测EOS凋亡；ELISA法测定BALF中IL-5、IL-8水平；Western blot检测EOS中cleaved caspase-9、Bak蛋白的表达。 结果 模型组BALF中细胞总数、EOS所占比例均显著高于对照组和干预组（$P<0.01$）；凋亡率显著低于对照组和干预组（$P<0.01$）。对照组及干预组BALF中IL-5和IL-8 浓度均低于模型组（$P<0.01$）；干预组A_3中两者浓度又分别低于干预组A_1和干预组A_2（$P<0.01$）。对照组、干预组分别与模型组相比，cleaved caspase-9、Bak蛋白表达的差异均有统计学意义（$P<0.01$）；干预组A_3分别与干预组A_1、A_2相比，cleaved caspase-9、Bak蛋白表达均有统计学差异（$P<0.01$）。 结论 大环内酯类药可协同糖皮质激素通过上调cleaved caspase-9、Bak的表达促进EOS细胞凋亡，从而发挥抗炎作用。

Abstract: Objective To investigate the effect of macrolides combined with glucocorticoids on the expression of cleaved caspase-9 and Bak in eosinophil (EOS) of bronchoalveolar lavage fluid (BALF) from the lung tissues of asthmatic

rats. Methods Asthmatic rat models were established by repeated ovalbumin sensitization of Sprague-Dawley rats, and the rats were divided into five groups including a control group, a model group, an interference group A_1 (erythromycin), an interference group A_2 (dexamesone) and an interference group A_3 (erythromycin + dexamesone). The percentage of EOS in BALF was counted, and EOS apoptosis was detected by TUNEL method. The levels of IL-8 and IL-5 in BALF were detected by ELISA, and the expression levels of cleaved caspase-9 and Bak in EOS from BALF were detected by Western blotting. Results The total cell number and the percentage of EOS in the model group were significantly higher than those in the control group and interference groups (P<0.01), and the EOS apoptosis rate was lower in the model group than in the control group and interference groups (P<0.01). The expression of IL-8 and IL-5 in the BALF of the model group increased significantly as compared with the control group and interference groups (P<0.01), and the expression of IL-8 and IL-5 in the BALF was significantly lower in the interference group A_3 than in the interference group A_1 and interference group A_2. The OD values of cleaved caspase-9 in the model group, interference groups and control group were 0.32 $\pm$0.05, 0.45 $\pm$0.08, 0.48 $\pm$0.10, 0.66 $\pm$0.15 and 0.75 $\pm$0.10, respectively , and the OD values of Bak in the model group, interference groups and control group were 0.40 $\pm$0.05, 0.54 $\pm$0.09, 0.57 $\pm$0.06, 0.78 $\pm$0.10 and 0.92 $\pm$0.12, respectively. The levels of cleaved caspase-9 and Bak were significantly higher in the interference groups and control group than in the model group (P<0.01), and those in the interference group A_3 were significantly higher than those in the interference group A_1 and interference group A_2 (P<0.01). Conclusion Macrolides combined with glucocorticoids may play an anti-inflammatory role by up-regulating cleaved caspase-9 and Bak expression to promote EOS apoptosis in the lung tissues of asthmatic rats.

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