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Synergistic injurious effects of superficial burns in combination with endotoxin injection on the lungs in rats

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Abstract Objective: To investigate the pulmonary pathological changes in the early stage after burns in combination with endotoxemia. Methods: After the rats were inflicted with 20% TBSA superficial burns and injected with small dosage of endotoxin, the changes of pulmonary functions and protein content in the bronchoalveolar lavage fluid (BALF) were determined. Results: A series of early morphological changes of the lung such as perivascular protein-rich edematous cuff, a lot of polymorphonuclear neutrophils in pulmonary interstitia etc. were found. Conclusion: 1) The pathological changes of the lungs in the early stage after burns combined with endotoxemia can roughly be divided into the following two phases: the interstitial pneumonia and alveolar effusion. 2) Burns and endotoxin can exert synergistic injurious effects on the lungs.

Key words burns; endotoxemia; pulmonary function; acute lung injury; rat

神经肽与哮喘关系的基础研究

Basic study on the relationship between neuropeptides and asthma

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探讨 P物质(SP)和血管活性肠肽(VIP)在哮喘发病机制中的作用。采用免疫组织化学染色、计算机图像分析、细胞培养、嗜酸性粒细胞(Eos)脱颗粒和粘附试验等。① 哮喘豚鼠肺内气道, SP纤维增多, VIP纤维缺乏。地塞米松处理后这种分布状态趋于正常。② SP对犬气道平滑肌细胞(ASMC)体外有促进作用, MKI受体拮抗剂、PLC抑制剂(新霉素)和钙离子通道阻滞剂对 SP的作用有不同程度的抑制效应。③ VIP对胎牛血清促犬 ASMC增殖作用呈抑制效应,这一作用被 VIP受体拮抗剂所阻断,被腺苷酸环化酶(AC)激动剂所强化。④ SP能显著增加血小板活化因子(PAF)对 Eos的促粘活性, NK-1受体拮抗剂和抗 CD_{11b}均能明显抑制 SP的这一作用。SP与人脐带静脉内皮细胞(HUVEC)共育后,能增加其对 SP+ PAF活化 Eos的粘附能力。⑤ VIP能抑制 PAF所致嗜酸性粒细胞过氧化物酶(EPO)活性的升高、脱颗粒反应和对内皮细胞的粘附。VIP的这些作用被 VIP受体拮抗剂所阻断, AC激活剂所强化。⑥ 哮喘患者外周血 T细胞对 VIP反应性降低, VIP和 NaF处理以后 [cAMP]i增加幅度均低于对照组。结论: 气道 SP纤维增多,通过促进 ASMC增生和 Eos粘附对哮喘气道高反应性形成有一定作用; VIP纤维在气道中消失削弱了对 ASMC增殖和 Eos炎的抑制作用, T细胞对 VIP反应性降低在哮喘发病学和治疗学上可能具有一定意义。

关键词 哮喘; P物质;血管活性肠肽;平滑肌细胞;气道;嗜酸性细胞; T淋巴细胞
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