

论文

可乐定对严重烫伤大鼠心肌Gsa mRNA表达的影响

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摘要:

目的研究可乐定对严重烫伤大鼠心肌Gsa mRNA表达的影响。方法将大鼠置于95℃水浴中烫10 s,造成背部皮肤30%体表面积III度烫伤。分别用dot blotting杂交,原位杂交、放射免疫分析及间接方法测定心肌Gsa mRNA表达水平、cAMP生成量与adenyl cyclase (AC)活性。结果烫伤后3 h心肌Gsa mRNA表达水平明显减少,0.3,1.0,3.0 mg·kg⁻¹可乐定(ip)可增加烫伤后心肌Gsa mRNA表达,表达相对量与可乐定剂量呈正相关。I₁-咪唑啉受体拮抗剂efaroxan可部分逆转可乐定增加烫伤后心肌Gsa mRNA表达的作用,减少量与efaroxan剂量呈显著正相关。AC和cAMP的变化与Gsa mRNA类似。结论可乐定可增加烫伤后早期大鼠心肌Gsa mRNA表达、AC活性和cAMP产生。

关键词: 可乐定 烧伤 信使RNA 腺苷酸环化酶 环腺苷一磷酸

EFFECTS OF CLONIDINE ON MYOCARDIAL Gsa mRNA EXPRESSION AFTER SCALDS IN RATS

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Abstract:

AIMTo explore the role of clonidine (Clo) on myocardial Gsa mRNA expression after scalds in rats. METHODS A 30% skin-full-thickness scald was produced by immersing rats in 95℃ water for 10 s. The myocardial Gsa mRNA expression level, cyclic AMP content and adenylyl cyclase (AC) activity were determined with dot blotting hybridization, *in situ* hybridization, radioimmunoassay and indirect method. RESULTS Three hours after scalds, the myocardial Gsa mRNA was significantly decreased to (61±20)% of the control group (P<0.01). AC activity and cAMP content were also decreased. Clo (0.3, 1.0 and 3.0 mg·kg⁻¹, ip) was shown to increase myocardial Gsa mRNA expression level (P<0.01 or P<0.05) after scalds to (131±28)%, (142±51)% and (139±48)% of the scald group, respectively, which were correlated with the Clo dose (γ=0.597, P<0.05). Clo 1.0 mg·kg⁻¹ and 3.0 mg·kg⁻¹ (ip) promoted AC activity and increased cAMP content, but Clo 0.3 and 0.1 mg·kg⁻¹ showed no significant effect (P>0.05). Selective I₁-imidazoline receptor antagonist efaroxan (Efa) (10, 5 mg·kg⁻¹, ip) was found to partially reverse the effect of Clo, while Efa 2.5 mg·kg⁻¹ showed no significantly influence. The reduced quantity of Gsa mRNA expression level correlated well with the Efa dose (γ=0.900, P<0.05). The change of AC and cAMP was similar to Gsa mRNA. CONCLUSION Clo increased the myocardial Gsa mRNA expression, AC activity and cAMP content after scalds in rats.

Keywords: burns messenger RNA adenylyl cyclase cyclic AMP clonidine

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