

论文

萘甲异喹对离体豚鼠心肌的作用

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摘要:

萘甲异喹(NI)呈浓度依赖性地降低离体豚鼠心房收缩力和频率。其拮抗豚鼠左房肌Iso正性肌力作用的PD₂'值为5.4,Ver为5.8。NI10μmol/L明显降低豚鼠乳头肌收缩力;缩短快反应APD,以对APD₂₀影响最大,但不影响APA和V_{max}。对高K⁺去极化慢反应动作电位,NI产生浓度依赖性负性肌力作用,同时明显降低APA,V_{max},缩短APD;提高细胞外液Ca²⁺浓度可使其抑制作用逆转。结果提示NI具有钙通道阻滞作用。

关键词: 萘甲异喹 心肌动作电位

EFFECT OF NAPHTHYLMETHYL ISOQUINOLINE ON THE ISOLATED GUI NEA PIG MYOCARDIUM

HT Yang and YL Yang

Abstract:

The effect of naphthylmethyl isoquinoline on amplitude of contraction and automaticity of guinea pig atria were investigated. The compound was found to markedly inhibit the force of contraction and automaticity in a concentration-dependent way. Propranolol competitively antagonized the effect of isoproterenol with-pA₂ of 7.5. Naphthylmethyl isoquinoline and verapamil antagonized isoproterenol, but in a noncompetitive manner with the pD₂' of 5.4 and 5.8, respectively.The effect of the compound on action potential and contractile force of guinea pig papillary muscles were also studied. It was shown to produce negative inotropic effects and shorten the fast action potential duration, but the maximal upstroke(V_{max}) and amplitude of action potential were not affected. Thus, an excitation-contraction uncoupling was observed. It also depressed the amplitude. V^{max} and duration of Ca²⁺-mediated slow action potential induced by high K⁺. Elevation of the CaCl₂ concentration from 2 to 5 mmol/L reversed its inhibition partially.These results indicate that naphthylmethyl isoquinoline has a blocking effect on calcium channels.

Keywords: Myocardiurn Action potential Naphthylmethyl isoquinoline

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