

论文

7-溴化乙氧苯四氢巴马汀抗心律失常作用的机理

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摘要:

7-溴化乙氧苯四氢巴马汀(7-bromoethoxybenzene-tetrahydropalmatine,EBP)10及30μmol/L均能明显延长豚鼠乳头状肌动作电位时程(APD),但对动作电位幅度(APA),静息电位(RP),超射(OS),零期最大上升速率(V_{max})无显著影响。EBP能按剂量抑制犬浦氏纤维慢内向电流(I_{si})及钾外向电流(I_x)的峰值。

关键词: 7-溴化乙氧苯四氢巴马汀 动作电位 慢内向电流 抗心律失常作用

THE MECHANISM OF ANTIARRHYTHMIC ACTION OF 7-BROMOETHOXYBENZENE-TETRAHYDROPALMATINE

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Abstract:

The mechanism of antiarrhythmic action and the electrophysiologic effects of 7-bromoethoxybenzene-tetrahydropalmatine (EBP) have been studied using conventional microelectrode technique. The effect of EBP on the membrane I_{si} and I_x currents were investigated in the canine cardiac purkinje fibres using the double microelectrode voltage clamp methods. EBP was shown to increase the duration of action potential at 20 and 90% of repolarization of isolated guinea pig papillary muscles. However, the amplitude of action potential, the resting potential and the overshoot, and maximum rate of 0 phase depolarization (V_{max}) remained unchanged. The membrane potential was held at 40 mV and command potential at -15mV, 0.3 Hz 500 ms. After, 10 min of perfusion of EBP 30 μmol/L, the slow inward current (I_{si}) was reduced markedly. When the holding potential was held at -20 mV., and the command potential at +10 mV, EBP (10~100μmol/L) exerted a depressed effect on the delayed (outward) rectifier current (I_x) in a dose-dependent manner. It may be concluded that the antiarrhythmic effects of EBP is mainly related to decrease the automaticity and prolong the duration of action potential at 20~90% of repolarization of isolated guinea pig papillary muscles.

Keywords: Action potential Slow inward current Antiarrhythmic action 7-Bromoethoxybenzene-tetrahydropalmatine

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