

论著

辣椒素对人心房肌的电生理效应

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摘要 目的 研究辣椒素对人心房肌的电生理效应及其作用机制。方法 应用经典玻璃微电极方法记录人心房肌特殊细胞的动作电位。结果 辣椒素 ($1\sim 30\ \mu\text{mol}\cdot\text{L}^{-1}$) 浓度依赖性地抑制人心房肌纤维的动作电位幅值, 0期最大除极速率, 舒张期(4相)除极化速率和起搏细胞放电频率, 此外还缩短90%动作电位时程。应用L-型钙通道开放剂Bay K8644($0.5\ \mu\text{mol}\cdot\text{L}^{-1}$)可拮抗辣椒素对人心房肌纤维的上述电生理效应, 但辣椒素受体竞争性抑制剂capsazepine($10\ \mu\text{mol}\cdot\text{L}^{-1}$)对辣椒素的效应并无影响。结论 辣椒素对人心房肌具有负性变时作用, 并可缩短复极化时程。这些效应可能与其抑制钙离子内流有关。

关键词 [辣椒素](#) [心房](#) [电生理学](#) [钙](#)

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Electrophysiological effects of capsaicin on human atrial fibers

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Abstract

AIM To study the electrophysiological effects of capsaicin on human atrial fibers. **METHODS** Parameters of action potential in human atrial specialized fibers were recorded using standard intracellular microelectrode technique. **RESULTS** Capsaicin ($1\sim 30\ \mu\text{mol}\cdot\text{L}^{-1}$) decreased the amplitude of action potential, maximal rate of depolarization, velocity of diastolic (phase 4) depolarization and rate of pacemaker firing, and shortened the 90% action potential duration in a concentration - dependent manner. L-type Ca^{2+} channel agonist Bay K8644 ($0.5\ \mu\text{mol}\cdot\text{L}^{-1}$) antagonized the inhibitory effects of capsaicin on human atrial fibers. Pretreatment of the fibers with capsazepine ($10\ \mu\text{mol}\cdot\text{L}^{-1}$), a competitive capsaicin antagonist, failed to influence the electrophysiological effects of capsaicin. **CONCLUSION** Capsaicin exerted a negative chronotropic action and accelerated the repolarization of human atrial specialized fibers which may be due to reduction in calcium influx and not mediated by capsaicin receptors.

Key words [capsaicin](#) [heart atrium](#) [electrophysiology](#) [calcium](#)

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