The Cutaneous Analgesic Effect of The Class I Antiarrhythmic Drugs.

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摘要

Abstract

BACKGROUND: Local anesthetics, when applied to nerves, produce reversible loss of sensation by blocking Na+ channels. Because all Class I antiarrhythmic drugs are Na+ channel blockers, theoretically, they may have local anesthetic effects. In this study, we sought to define the cutaneous local anesthetic actions of three Class I antiarrhythmic drugs. METHODS: Using a subcutaneous infiltration model in rats, the potencies and durations of action of quinidine (Class IA), mexiletine (IB), and flecainide (IC) were determined and compared with the actions of lidocaine and bupivacaine. Saline injection was used as control. RESULTS: Three Class I antiarrhythmic drugs produced a dose-related cutaneous analgesia with ranking of potencies of bupivacaine > flecainide > quinidine > mexiletine > lidocaine ($P < 0.05$ for the differences among drugs). On an equipotent basis, the ranking of durations of action was flecainide > quinidine and bupivacaine > mexiletine and lidocaine ($P < 0.05$ for the differences among drugs). CONCLUSION: Three Class I antiarrhythmic drugs, quinidine (IA), mexiletine (IB), and flecainide (IC) have a local anesthetic effect on cutaneous analgesia.