Effect of trilinolein on strophanthidin-induced ventricular tachycardia in guinea pigs.

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摘要

Abstract

Trilinolein, a triacylglycerol with linoleic acid, was found to inhibit Ca2+ influx in cardiomyocytes. The purpose of this study was to evaluate the effects of trilinolein on ventricular arrhythmia induced by intravenous strophanthidin in guinea pigs anesthetized with intraperitoneal urethane. After strophanthidin-induced ventricular tachycardia, treatment with trilinolein (0.1, 1, 10 and 100 μg/kg) or control (0.04% propylene glycol) did not terminate ventricular tachycardia. However, 1, 10 and 100 μg/kg trilinolein could narrow the width of the QRS complex during ventricular tachycardia. Pretreatment with trilinolein before strophanthidin administration did not prevent the occurrence of ventricular tachycardia; the doses of strophanthidin required to induce arrhythmias (ventricular extrasystole and ventricular tachycardia) were similar in guinea pigs pretreated with trilinolein or control. However, there were fewer ventricular extrasystoles in guinea pigs pretreated with trilinolein than in the control group (ANOVA, $p < 0.01$). Moreover, the ventricular extrasystoles were fewer in guinea pigs pretreated with higher doses of trilinolein (100 μg/kg, 103 ± 60; 10 μg/kg, 188 ± 86) than lower doses of trilinolein (1 μg/kg, 366 ± 102; 0.1 μg/kg, 436 ± 145). This study demonstrated that trilinolein was not effective in terminating or preventing strophanthidin-induced ventricular tachycardia. However, trilinolein could improve ventricular depolarization and suppress ventricular extrasystoles