

# Electropharmacologic characteristics of ventricular proarrhythmia induced by ibutilide

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摘要

## Abstract

The purpose of this study was to evaluate in vivo the proarrhythmic effects of ibutilide in dogs with or without ventricular hypertrophy. Fourteen dogs received repeated experiments both during the acute and chronic phases (8 weeks, with ventricular hypertrophy) of complete atrioventricular (AV) block. Twelve-lead ECG, monophasic action potentials in the left and right ventricle were recorded before and after each dose of ibutilide (0.01-0.08 mg/kg) during different ventricular rates. In these dogs, ibutilide increased QT interval, biventricular APD90, interventricular  $\Delta$ APD90 (difference between the left and right ventricular APD90), and QT dispersion, and induced early afterdepolarizations in a dose-dependent manner. The interventricular  $\Delta$ APD90, QT dispersion, and increases of QT interval were more pronounced during slower ventricular rates. There were greater QT interval, biventricular APD90, interventricular  $\Delta$ APD90, and QT dispersion values during chronic AV block than during acute AV block. Moreover, ibutilide can induce higher incidences of early afterdepolarizations and torsades de pointes [six (43%) of 14 versus 0 of 14;  $p < 0.05$ ] during chronic AV block than during acute AV block. In conclusion, ibutilide can prolong ventricular repolarization and increase dispersion of ventricular repolarization in a dose-dependent and reverse rate-dependent manner. The high incidence of torsades de pointes in the dogs during chronic AV block suggests the importance of ventricular hypertrophy in the occurrence of ibutilide-induced proarrhythmia.