

Abstract Title:

Retrospective evaluation of electrocardiographic T-wave indices in Doberman pinschers with dilated cardiomyopathy

Authors:

Lillian Black, Lynne O'Sullivan

Affiliations:

Department of Companion Animals, Atlantic Veterinary College, University of Prince Edward Island

Abstract Content:

Introduction/Hypotheses/Objectives: Dogs with dilated cardiomyopathy (DCM) are at high risk of congestive heart failure (CHF), arrhythmias, and sudden death (SD). Abnormal cardiac repolarization can lead to higher risk of arrhythmia and SD. It is hypothesized that Dobermans with DCM will demonstrate repolarization abnormalities detectable by examination of the T-wave on an electrocardiogram (ECG), and that T-wave indices will differ between dogs with and without arrhythmias on ECG and between those with and without SD outcome. The objectives of this study are to examine ECGs in a group of Dobermans pinchers with DCM, measure variables related to the T-wave, and determine whether these variables are associated with arrhythmia status or outcome.

Materials/Methods: ECGs of 59 Dobermans with DCM and CHF were digitally scanned, and T-wave indices were measured. The data were tested for normality using the Shapiro-Wilk test. A one sample Wilcoxon Signed Rank test was used to compare data with available published normal reference values. T-wave indices were compared among groups by t-tests for normally distributed data or Wilcoxon Rank Sum tests for non-normally distributed data.

Results: T-wave duration, T-wave amplitude, T/R%, T peak-to-end (Tpte) duration, QT interval, and Tpte/QT ratio were all significantly higher in DCM Dobermans than published normal values. T-wave variables did not differ between Dobermans who experienced SD and who did not, nor between Dobermans with ventricular arrhythmias on ECG vs not.

Conclusions: Dobermans with DCM have evidence of abnormal repolarization on ECG compared to normal dogs. T-wave indices did not differentiate Dobermans with or without arrhythmias nor those that experienced SD. These findings may be related to the way in which arrhythmias were detected (3-minute ECG) or the confounding effect of euthanasia in this group of dogs with advanced disease. The study data may benefit from additional modelling and survival analyses to provide further insight.

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