# Effects of Sotalol on T-Wave Morphology in 24-Hour Holter ECG Recordings

Thomas Brennan* and Lionel Tarassenko

Institute of Biomedical Engineering, University of Oxford, Headington, United Kingdom

This article describes the impact of sotalol, a Class III anti-arrhythmic that is known to prolong the QT interval and induce torsades de pointes, on ventricular repolarisation. Timing and T-wave morphology-based biomarkers of ventricular repolarisation are extracted from 24-hour Holter electrocardiogram (ECG) recordings from a clinical sotalol study. The results show sotalol produces a significant dose-dependent increase of QT and T-peak to T-wave end (Tpe) intervals ($p<0.0001$). The effect of sotalol tends to significantly increase the morphology-based biomarkers, with the exception of T-area and T-wave area-based symmetry. The morphology based biomarkers are shown to be more sensitive to the effects of sotalol and the maximum effect on morphology biomarkers tends to take place after the maximum effect on the heart rate, QT and Tpe intervals.