Abstract:

Decreased intrasubject variability of QTc values is needed to increase the power and reduce the size of the so-called thorough QT studies. One source of QTc variability is the lack of systematic measurements when electrocardiograms (ECG) with closely matching morphologies are not measured in an exactly corresponding way. The inaccuracy can be eliminated by postprocessing of QT measurements by ECG pattern matching. This study tested the effects of pattern matching in ECG measurements in two populations of healthy subjects (n = 48 + 56) and in a population of patients with advanced Parkinson's disease (n = 130) in whom both day-time and night-time data were available. Intrasubject QTc variability was measured by intrasubject standard deviations (SD) of QTc values obtained with manual measurements before and after pattern-matching measurement alignments. In each subject, QT values (n = 230-320) in one drug-free long-term ECG recording were evaluated. The pattern-matching adjustment of the QT measurement decreased the intrasubject QTc variability from 5.2 +/- 1.0 to 4.5 +/- 1.0 ms (P< 10(-14)) from 6.4 +/- 1.7 to 5.5 +/- 1.6 ms (P< 10(-10)) from 5.6 +/- 1.5 to 4.6 +/- 1.4 ms (P< 10(-34)) and from 6.1 +/- 1.9 to 5.0 +/- 1.7 ms (P< 10(-33)), in the two populations of healthy subjects and in the day-time and night-time recordings of Parkinson's disease patients,
respectively. Hence, morphological pattern adjustment of QT interval measurements improves the quality of the QT data with substantial practical implications. Reductions in intrasubject QTc variability were reproducibly found in different populations and thus the technology might be recommended for every thorough QT/QTc study. Noticeable reductions of necessary study size are likely achievable in this way.

Zeitschriftentitel / Abkürzung:
Pacing Clin Electrophysiol

Jahr: 2009
Band: 32
Heft / Issue: 1
Seiten: 119-30
Sprache: eng
Print-ISSN: 0147-8389
TUM Einrichtung:
I. Medizinische Klinik und Poliklinik

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > I. Medizinische Klinik und Poliklinik (Kardiologie) > 2009

entries: