1. Record Nr. UNINA9910346720503321

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Titolo	ECG Based Analysis of the Ventricular Repolarisation in the Human Heart
Pubbl/distr/stampa	KIT Scientific Publishing, 2012
ISBN	1000028834
Descrizione fisica	1 online resource (XX, 224 p. p.)
Collana	Karlsruhe transactions on biomedical engineering / Ed.: Karlsruhe Institute of Technology / Institute of Biomedical Engineering
Soggetti	Technology: general issues
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	ECG recordings provide diagnostic relevant information on the de- and repolarisation sequences of the heart. A modification of the repolarisation sequence is assumed to cause Torsades de Pointes. Especially drug induced effects on the repolarisation processes are in focus, since some non-cardiac drugs have been associated with sudden cardiac death in the 1990s. The analysis of the ventricular repolarisation using a set of parameters depicting the morphology of the T-wave is introduced in this work. Therefore, new methods of fully automatic patient-specific QRS detection, beat classification and precise T-wave delineation are presented. Using these methods, medical studies are investigated regarding the modification of the T-wave by different compounds. Also the impact of the heart rate on the morphology of the T-wave is part of this research.The reliable identification of ventricular ectopic beats allows an analysis of the influence of these beats on subsequent heart beats. It turned out that the morphology of subsequent heart beats can significantly be changed. This might give new information on the proarrythmical risk of ventricular ectopic beats.