Non-invasive diagnosis of coronary artery disease using cardiogoniometry performed at rest

Original title / Originaltitel
english

Summary / Zusammenfassung
Principles: Cardiogoniometry is a non-invasive technique for quantitative three-dimensional vectorial analysis of myocardial depolarization and repolarization. We describe a method of surface electrophysiological cardiac assessment using cardiogoniometry performed at rest to detect variables helpful in identifying coronary artery disease.

Methods: Cardiogoniometry was performed in 793 patients prior to diagnostic coronary angiography. Using 13 variables in men and 10 in women, values from 461 patients were retrospectively analyzed to obtain a diagnostic score that would identify patients having coronary artery disease. This score was then prospectively validated on 332 patients.

Results: Cardiogoniometry showed a prospective diagnostic sensitivity of 64%, and a specificity of 82%. ECG diagnostic sensitivity was significantly lower, with 53% and a similar specificity of 75%.

Conclusions: Cardiogoniometry is a new, noninvasive, quantitative electrodiagnostic technique which is helpful in identifying patients with coronary artery disease. It can easily be performed at rest and delivers an accurate, automated diagnostic score.

Publications / Publikationen
SWISS MED WKLY 20 08;138(15–16):230–238 · Weitere Informationen unter www.smw. ch

Keywords / Suchbegriffe
Key words: coronary artery disease; myocardial ischemia;, cardiogoniometry; electrodiagnosis
Project Leadership and Contacts / Projektleitung und Kontakte
Dr Firat Duru, Prof. (Project Leader) firat.duru@usz.ch
Dr. Michael Schüpbach, MD firat.duru@usz.ch
Prof Bernhard Emese, MD
Prof Patrick Loretan, MD

Funding Source(s) / Unterstützt durch
No project-specific funding

In Collaboration with / In Zusammenarbeit mit
Correspondence: Dr Michael Schüpbach
Centre d’Investigation Clinique
Bâtiment Paul Castaigne
Centre Hospitalier Universitaire Pitié-Salpêtrière
47–83 Boulevard de l’Hôpital
F-75013 Paris
E-Mail: michael.schupbach@wanadoo.fr

Department of Cardiology, University Hospital, Inselspital, Bern, Switzerland
Medical Clinic, Hospital Bern Tiefenau, Tiefenaustrasse, Bern, Switzerland

d Clinic for Cardiology, University Hospital of Zurich and Zurich Centre for Integrative Human Physiology, Zurich, Switzerland
Department of Biostatistics and Medical Information, Pitié-Salpêtrière Medical University, Paris, Switzerland

Duration of Project / Projektdauer
Jan 2005 to Dec 2007