



Abstract

Grant Number: 1R01NR008092-01

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PI Title:

Project Title: New ECG Criteria for Posterior Myocardial Infarction

Abstract: *DESCRIPTION (provided by applicant): The long-term objective of this proposal is to establish a more sensitive and specific electrocardiogram (ECG) criteria that can be used for early and accurate detection of an acute posterior myocardial infarction (MI). These new ECG criteria can be used by nurses and other clinicians to facilitate decision-making in the Emergency Department (ED) and expand the use of revascularization therapies to patients suspected of having an acute posterior MI. Currently, standard 12-lead ECGs are obtained on all patients presenting to the ED with chest pain. The 12-lead ECG has been useful in the diagnosis of acute anterior and inferior MI's, however standard 12-leads are not in the optimal anatomic position for the detection of posterior ischemia. Therefore, the specific aims of this proposal are: 1) to determine in subjects (n=1083) presenting to the ED for rule out of MI, if the use of a 15-lead ECG (standard 12-lead + posterior leads V7-9) and 0.5 mm ST segment elevation in two contiguous posterior ECG leads is more discriminating in correctly classifying patients (n=40) as having an acute posterior MI; 2) to determine if continuous 15-lead ECG monitoring (12 hours) vs. serial 15-lead ECGs improves the diagnostic precision, 3) to determine the presenting symptoms in acute posterior MI patients and, 4) to determine during a 6-month follow-up, the prevalence of associated complications in patients with posterior MI. Serial and continuous 15-lead ECGs, along with echocardiography, CK-MB mass and troponin I levels will be obtained in male and female patients (n=1083) presenting to the ED for rule out of MI. The sensitivity, specificity, and predictive accuracy of the above ECG criteria for detecting acute posterior MI will be determined and validated against echocardiographic data and changes in serum cardiac markers of MI. Using Myocardial Infarction Symptoms Profile questionnaire, subjects with posterior MI*

will be interviewed to determine clinical profiles of symptom presentation. The incidence of in-hospital and six-month complications, such as papillary muscle dysfunction and mitral regurgitation, will be determined. This study will aid in the detection and follow-up of patients with posterior myocardial infarction.

Thesaurus Terms:

diagnosis quality /standard, electrocardiography, emergency care, myocardial infarction emergency service

bioimaging /biomedical imaging, human subject, patient oriented research

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Fiscal Year: 2001

Department: NONE

Project Start: 30-SEP-2001

Project End: 30-JUN-2005

ICD: NATIONAL INSTITUTE OF NURSING RESEARCH

IRG: NURS

