

University of Cincinnati
College of Nursing

Accuracy of the Precordial V-Quick Patch^J in Persons with Cardiac or Pulmonary Disease

Principal investigator: Linda Baas, Ph.D., RN, ACNP

Co-investigator: Theresa Beery, Ph.D., RN

Statistician: Gordon A. Allen, Ph.D.

Consultant: Susan Ware, M.S.N., R.N., CS-FNP, ACNP

Aim of the Study

In order to obtain maximum clinical benefits from thrombolytic agents, patients with an acute myocardial infarction (AMI) need to be treated within ninety minutes from the time symptoms first occur (Cummins, 1997). Therefore, treatment delays should be minimized.

The 12-lead electrocardiogram (ECG) has become a standard diagnostic tool in the detection of AMI, along with history and cardiac enzymes. Currently the National Heart, Lung and Blood Institute (NHLBI, 1995) and the American Heart Association (Cummins, 1997) recommend that all patients experiencing chest pain receive a 12-lead ECG as soon as possible in the pre-hospital setting or emergency department (ED).

Treatment delays are often attributed to the inability to obtain a 12-lead ECG within the ninety minute window of time. This is of special concern for Emergency Medical System (EMS) providers in the pre-hospital care setting (Phalen, 1994). EMS personnel are encouraged to decrease on-scene times and still obtain essential screening information for possible thrombolytic use, including 12-lead ECGs.

Recent work by Ware (1997) demonstrated the efficacy of an innovative lead placement system, the V-Quick^J patch, in a study of over 50 healthy men and women. There were no significant differences in axes, or amplitude of the Q, R, and S waves when the ECGs obtained with the V-Quick patch were compared to ECGs obtained with standard, individually placed, tab-style electrodes. In order for the V-Quick patch to be useful clinically it must provide the same quality ECG as standard individual precordial electrode placement currently in use. The equivalence of the two systems must be supported in persons with abnormal as well as normal ECGs.

The aim of this experimental study was to demonstrate the efficacy, of this new precordial (V₁ - V₆) V-Quick patch through comparison to traditional 12-lead ECG systems in persons with heart or lung disease. Because the primary purpose of the V-Quick patch is detection of myocardial infarction, it is important to assess the performance of this new precordial electrode system in a sample of persons with known heart disease. This would allow comparisons of performance of the

CONFIDENTIAL