Theses

Validation of the Rose Questionnaire and the Resting Electrocardiogram against the Exercise Electrocardiogram for Screening of Coronary Heart Disease

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Abstract

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Introduction

The principal focus of this study is on the 'Rose Questionnaire' - a preliminary screening tool for coronary heart disease and a possible epidemiological tool for monitoring coronary heart disease in the community. It has been widely employed with increasing methodological refinement since its initial use as a screening tool in the 1960s.

Objectives

The objectives consisted of the testing of validity of the Rose Questionnaire results against the Exercise ECG in two sample groups of patients and community volunteers, comparing the Resting ECG with the Results of the Rose questionnaire in the same samples and screening a small community sample using the Rose questionnaire.

Methodology

The Sinhala translation of the modified Rose questionnaire was administered in the form of a series of individual interviews to 138 patients with chest pain and 137 community volunteers. Following a clinical examination, the blood pressure was

measured, and a 12-lead Resting ECG was obtained. Exercise ECG was done on the MAX-1 computerized exercise testing system and the Series 2000 treadmill using the modified Bruce protocol with routine monitoring. The resting ECG was analysed using the Minnesota code and by observation for the presence of slurring and notching. Rose questionnaire was also used on a sample of 686 asymptomatic persons from a community.

Results

The sensitivity, specificity, positive predictive and negative predictive values were 80%, 31.1%, 68.6% and 45.5%, respectively, for the patient group and 39%, 89%, 69% and 71.1%, respectively, for the community group when the Rose questionnaire results were validated against the Exercise ECG. A higher positive predictive value was seen in females compared to males in the community sample (p = 0.0144). In the case of the community sample, the presence of one major and/or minor criterion of the Minnesota code in the resting ECG had a marginally lower positive predictive value of 55.3% compared with that for the Rose questionnaire (69%) and 100% of those who were both Rose questionnaire and resting ECG positive were also Exercise ECG positive. The overall prevalence of Rose angina in the community sample of 686 was 6.4% with females showing a higher prevalence compared to males (7.7% and 5.9% respectively). There were differences in prevalence with regard to age and the daily physical activity.
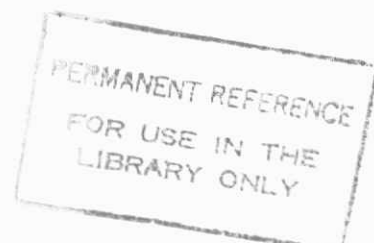
Conclusions

The Rose Questionnaire has a low sensitivity when validated against the Exercise ECG for community screening of coronary heart disease. However, the study results suggest that, as an instrument of clinical screening, the Rose questionnaire is at least marginally superior to the resting ECG alone. Rose questionnaire and Resting ECG taken together could serve as a cost effective method for screening the community for coronary heart disease.