Long term follow up after comparison of two strategies in a chest pain unit: exercise echocardiography and multidetector computed tomography

Authors:
M Pineiro-Portela¹, J Peteiro-Vazquez¹, A Bouzas-Mosquera¹, D Martinez-Ruiz¹, JC Yanez-Wronenburger¹, F Pombo¹, JM Vazquez-Rodriguez¹, ¹Complexo Universitario Hospitalario de A Coruna - A Coruna - Spain,

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Introduction and objectives: Up to 5% patients with acute chest pain present an acute coronary syndrome (ACS). This study aimed to compare peak exercise echocardiography (ExE) and multidetector computed tomography (MCT) in patients referred to a chest pain unit.

Methods: 203 patients with =1 cardiovascular risk factors, no ischemic ECG changes and negative biomarkers were randomized to ExE (n=103) or MCT (n=100). The endpoints were hard events (cardiovascular death and non-fatal myocardial infarction), combined events (hard events and revascularizations), and combined events plus readmissions during follow-up. Cost of either strategy was also investigated.

Results: Mean age was 64±11 years and 131 patients were male. Hypertension was seen in 71%, hypercholesterolemia in 74%, diabetes mellitus in 28%, and smoking in 21%. Most of the patients had a low TIMI risk score (68% TIMI I and 32% TIMI II). Mean follow-up was 4,7 ± 2,7 years. Invasive angiography due to positive/nonconclusive results was performed in 34 of the patients, 103 submitted to SE and in 27 of the 100 submitted to MCT (33% vs. 27%, p=0.15). A final diagnosis of acute coronary syndrome was achieved in 53 patients (30 [88%] in the ExE group and 23 [85%] in the MCT group, p=0.12). There were no significant differences between groups in hard events (5 [5%] patients in the ExE group and 7 [7%] in the MCT group, p=0,42), combined events (35 patients [34 %] in the ExE group and 29 [29%] in the MCT group), and combined events plus readmissions (43 [42%] patients in the ExE group and 41 [41%] in the MCT). The median stay in hospital was 7 (5-10) days in the ExE group and 8 (5-10,25) in the MCT group (p=NS). For patients with negative results by either technique the mean stay was less than 8 hours. There were no differences in the global cost, although it was lower for patients with negative ExE (557 € vs. 706 €, p<0,02) as compared to those with negative TCM.

Conclusions: Both MCT and ExE are equally effective for the stratification of patients with low to moderate probability of ACS admitted to a chest pain unit. The cost was similar with both strategies, although significant lower in ExE when negative studies were compared.