A stress echocardiography service in a district general hospital: can we ensure quality without quantity?

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Aims

We determined the accuracy, safety and clinical predictive value of stress echocardiography (SE) as a risk stratification tool for myocardial ischaemia when implemented in a rural district general hospital performing relatively low case volumes.

Methods

We retrospectively reviewed 451 patients who were consecutively referred for SE between 2009 and 2012. 71 (16%) had a positive result and 367 (81%) were negative for reversible myocardial ischaemia. We correlated positive SE diagnoses with findings on subsequent coronary angiogram to determine the sensitivity. Patients with negative SE outcomes were followed up at 2 years and 4 years where possible.

Results

63 positive SE patients underwent angiographic assessment, with 48 (76%) having significant atheromatous coronary disease. 249 negative SE patients were followed up at 2 years, with 8 (3.2%) re-admissions for chest pain. However, all were negative for acute coronary syndromes (ACS) and there was no cardiac-related mortality. At 4 years, 2 (2.4%) of the 83 patients followed up were diagnosed with ACS, with no cardiac-related mortalities. Regarding procedural safety, there were two cases (0.4%) of periprocedural ACS. Hypotension (2.9%) and transient arrhythmia (1.8%) were the most frequent adverse effects of SE and fully resolved with treatment.

Conclusions

SE is a functional diagnostic test for myocardial ischaemia with greater versatility and lower cost than other non-invasive, functional imaging modalities recognised in the current NICE guidelines. It is an attractive investigation for hospitals with limited service provision. Although, smaller volume centres may find it challenging to maintain diagnostic accuracy, our results suggest SE remains a safe test with a high specificity despite being performed in a relatively low volume centre. Patients with a negative scan have a very good prognosis at 2 years with a retained low, albeit increased, readmission and event rate between 2 and 4 years of follow-up. ■

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