2-Hour Accelerated Diagnostic Protocol to Assess Patients With Chest Pain Symptoms Using Contemporary Troponins as the Only Biomarker

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Abstract:

Objectives The purpose of this study was to determine whether a new accelerated diagnostic protocol (ADP) for possible cardiac chest pain could identify low-risk patients suitable for early discharge (with follow-up shortly after discharge). Background Patients presenting with possible acute coronary syndrome (ACS), who have a low short-term risk of adverse cardiac events may be suitable for early discharge and shorter hospital stays. Methods This prospective observational study tested an ADP that included pre-test probability scoring by the Thrombolysis In Myocardial Infarction (TIMI) score, electrocardiography, and 0 + 2 h values of laboratory troponin I as the sole biomarker. Patients presenting with chest pain due to suspected ACS were included. The primary endpoint was major adverse cardiac event (MACE) within

30 days. Results Of 1,975 patients, 302 (15.3%) had a MACE. The ADP classified 392 patients (20%) as low risk. One (0.25%) of these patients had a MACE, giving the ADP a sensitivity of 99.7% (95% confidence interval [CI]: 98.1% to 99.9%), negative predictive value of 99.7% (95% CI: 98.6% to 100.0%), specificity of 23.4% (95% CI: 21.4% to 25.4%), and positive predictive value of 19.0% (95% CI: 17.2% to 21.0%). Many ADP negative patients had further investigations (74.1%), and therapeutic (18.3%) or procedural (2.0%) interventions during the initial hospital attendance and/or 30-day follow-up. Conclusions Using the ADP, a large group of patients was successfully identified as at low short-term risk of a MACE and therefore suitable for rapid discharge from the emergency department with early follow-up. This approach could decrease the observation period required for some patients with chest pain. (An observational study of the diagnostic utility of an accelerated diagnostic protocol using contemporary central laboratory cardiac troponin in the assessment of patients presenting to two Australasian hospitals with chest pain of possible cardiac origin; ACTRN12611001069943)

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