Predictive value of a 6-hour ECG/troponin protocol in patients with chest pain

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**Introduction:** Patients presenting with chest pain and considered to be at low risk of acute coronary syndrome (ACS) may still have coronary heart disease. The potential risk of sudden cardiac death due to arrhythmias or progression to acute myocardial infarction still exists. To minimize this risk, we have designed a 6-hour risk stratification protocol for patients with a low risk of acute myocardial infarction on initial assessment in the Accident and Emergency Department (AED).

**Materials & Methods:** This was a retrospective observational study with the aim of determining the risk of adverse cardiovascular events in chest pain patients attending an AED. These patients were subject to an ECG and cardiac troponin T tests (cTnT) at 0 hour and at 6 hours (if the two tests were negative at 0 hour), and were put under observation in the AED observation ward during the same period. The main outcome measures were adverse cardiac events at 30 days.

**Results:** A total of 371 Chinese patients considered to have low risk of ACS were recruited into the protocol. Troponin T tested positive in 19 patients (5.1%) at 0 hour and 8 patients (2.2%) at 6 hours. Amongst the 332 patients that were discharged directly from the AED, there were no re-admissions for cardiac-related deaths, acute myocardial infarction, arrhythmia or heart failure.

**Conclusion:** The 6-hour ECG and troponin T observation protocol is a useful tool to allow safe discharge of chest pain patients who are at low risk of acute coronary syndrome. (Hong Kong j.emerg.med. 2003;10:146-152)

**Keywords:** Chest pain, clinical protocols, observation, risk, troponin T