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CLINICAL RESEARCH
Acute coronary syndromes

Consequences of implementing a cardiac troponin assay with improved sensitivity at Swedish coronary care units: an analysis from the SWEDEHEART registry

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Aims

Cardiac troponin (cTn) assays with improved sensitivity are increasingly utilized for the assessment of patients admitted because of suspected acute coronary syndrome (ACS). However, data on the clinical consequences of the implementation of such assays are limited.

Methods and results

In a retrospective register-based study (37 710 coronary care unit admissions; SWEDEHEART registry), we compared the case mix, the use of diagnostic procedures, treatments, and 1-year all-cause mortality 1 year before the implementation of a cTn assay with improved sensitivity (study period 1) and 1 year thereafter (study period 2). During study period 2, more at-risk patients were admitted and more patients had cTn levels above the myocardial infarction cut-off (ACS patients +13.1%; non-ACS patients +160.1%). cTn levels above this cut-off exhibited stronger associations with mortality risk in study period 2 (adjusted HR 4.45 [95% confidence interval, CI, 3.36–5.89]) compared with period 1 (adjusted HR 2.43 [95% CI 2.11–2.80]), similar as for the cTn ratio relative to the respective 99th percentile. While there was no multivariable-adjusted increase in the use of diagnostic procedures, significant trends towards more differentiated treatment depending on the cause of cTn elevation, i.e. ACS or non-ACS, were noted.

Conclusions

The implementation of a cTn assay with improved sensitivity was associated with an increase in the number of patients who due to their cTn-status were identified as suitable for beneficial therapies. There was no inappropriate increase in hospital resource utilization. As such, cTn assays with improved sensitivity provide an opportunity to improve the clinical management of patients with suspected ACS.

Keywords

Cardiac troponin • Acute coronary syndrome • Clinical management • Cardiovascular outcomes • Coronary care unit

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