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A RAPID CHEST PAIN ASSESSMENT PATHWAY INCLUDING HIGH-SENSITIVITY TROPONIN T TESTING REDUCES LENGTH OF STAY

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doi:10.1136/heartjnl-2013-304019.22

Introduction Patients admitted with chest pain represent a major part of the workload of all acute hospitals. Recently available high-sensitivity troponin assays provide an opportunity to accelerate assessment of these patients as they can safely exclude myocardial infarction (MI) much earlier after symptom onset, avoiding the need to wait for a 12 h sample. Both local and national priorities encourage increasing same-day discharge and reducing length of stay for low-risk patients with chest pain.

Methods In March 2012 we introduced a new pathway to the Chest Pain Assessment Unit of a busy District General Hospital. This combines high-sensitivity troponin T (hsTnT) testing at admission and 6 h after symptom onset with formalised clinical risk-assessment using the ADP score, a modified and well-validated version of the TIMI risk score. The pathway was introduced as a pilot in working hours only. Data on 5271 admissions over the preceding 2 years were used as a baseline. Hospital episode statistics data was used to assess and compare length of stay (Mann-Whitney U test), the proportion of patients discharged on the same day and discharge diagnosis frequency (χ^2 test) for all patients and for those with a final diagnosis of non-cardiac chest pain (NCCP). hsTnT results (normal level<14 ng/l) were compared with a 3-month sample of previously used point-of-care troponin T test results (normal level <50 ng/l).

Results 331 patients were admitted and assessed using the new pathway with paired hsTnT testing between March and September 2012. 34% of patients had a discharge diagnosis of non-cardiac chest pain.

Table 1

Group	Baseline —original pathway	Results—new pathway	p Value
Median length of stay (hours)—All diagnoses	28.2	27.3	0.07
Median length of stay (hours)—NCCP only	13.9	7.6	0.04
Proportion of same day discharges—All diagnoses	29%	36%	0.01
Proportion of same day discharges—NCCP only	49%	63%	0.01

Table 2

Troponin result	Conventional TnT test	hsTnT test	p Value
In normal range	76%	39%	<0.001
Abnormal	24%	61%	<0.001

There was a significant decrease in the number of low-risk patients unnecessarily given anti-platelet agents (50% to 14%, p<0.001).

The changes provided a net cost benefit to the unit of approximately £14 000 per year, mainly driven by increased NHS Payment by Results tariffs for patients discharged on the same day.

A large increase in the number of abnormal troponin results was seen but there was no significant change in the final rate of diagnosis of MI (16–17%, p=0.24%).

Conclusions The introduction of a modified pathway for the assessment of chest pain including hsTnT testing was successful in significantly decreasing length of stay and increasing the proportion of same-day discharges, largely in those patients with non-cardiac chest pain. This enhanced patient satisfaction, improved bed availability and had positive financial implications for the unit. Significantly more troponin results were technically abnormal, although this did not result in an increased rate of MI diagnosis in this population, which is an interesting result requiring further investigation.