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Can use of high sensitivity troponin (0 & 2 hrs) avoid unnecessary hospital admissions and save money?

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Background: Every four minutes someone is admitted to hospital suffering from a heart attack or a chest pain event in the UK, totaling over 150,000 hospitalizations a year. Chest pain is one of the most common presentations in the emergency department and quite a few of them get admitted as low risk ACS patients. With the developments in technology, we have increasingly sensitive troponin assays available. Previous-generation troponin assays have been used as diagnostic and prognostic markers in acute coronary syndrome patients and for risk stratification to guide triage decisions and aid in treatment selection. New, high-sensitivity troponin assays represent an important advance with added sensitivity for cardiac myocyte necrosis. High-sensitivity troponin assays detect concentrations of the same proteins that conventional sensitivity assays are aimed at detecting, just in much lower concentrations.

Objective: The objective of the study is to find if high sensitivity troponin can avoid unnecessary admission and save money.

Method: We did the retrospective data analysis for 100 patients presenting in the emergency department of University hospitals Birmingham in the month of March 2016. All adult patients admitted with the diagnosis of ACS were included in the study.

Results: We included 100 patients admitted with the diagnosis of ACS under the medical team in the month of March 2016. 86% patients had a serial troponin done during the admission. Rest of the 14% had a single troponin done. Only 8% patients had a raise in the serial troponin, rest of them was discharged home. The average length of stay was 33 hours.

Discussion: Based on the results of this data analysis, it has been highlighted that considering the use of high sensitivity troponins at 0 and 2 hours coupled with appropriate risk stratification of patients presenting with chest pain in the Emergency department, can possibly help in safely discharging a major percentage of patients and avoiding unnecessary admissions to the hospital at the same time, making it possible to achieve the above objectives within the NHS policy of 4 hours breach time for the Emergency department.

Conclusion: We have 5-10 patients every day presenting to the emergency department with chest pain. About 50% of them get admitted with the diagnosis of ACS. 86% of our patients could have been potentially discharged home by using high sensitivity troponin at 0 and 2 hours and hence could have avoided 86% admissions. This in turn could have saved quite some money. With the growing pressure in the emergency departments due to ever increasing number of patients all these high sensitivity tests could potentially make some difference.

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