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A multicenter evaluation of the safety and effectiveness of a 0h/1h protocol in the assessment of emergency department chest pain patients

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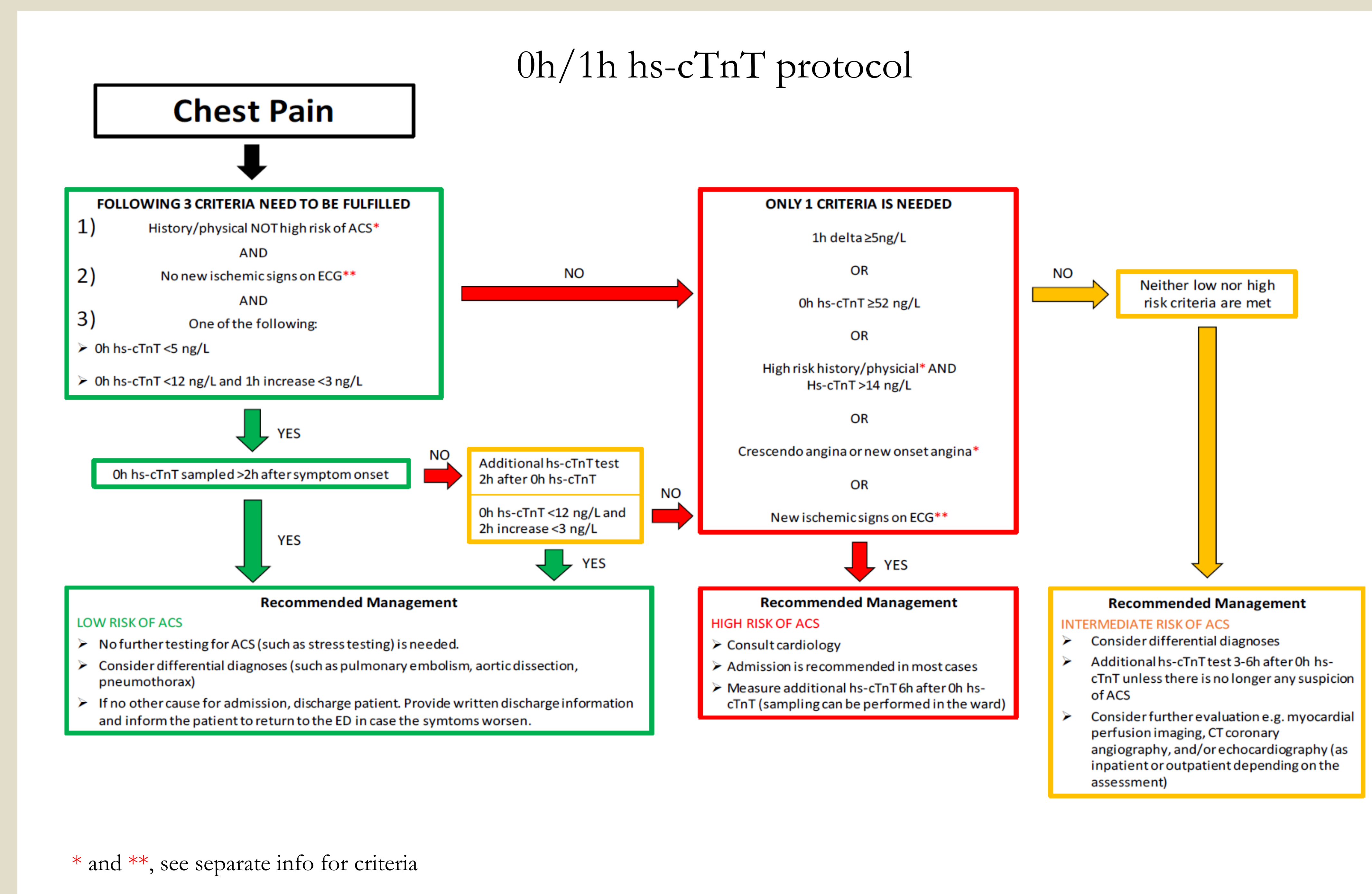


Background

In emergency department (ED) chest pain patients, the European Society of Cardiology recommends the use of a protocol with high-sensitivity cardiac Troponin (hs-cTn) tests at 0 and 1 h. However, the recommendation is based on observational studies and the effects of the protocol when implemented in routine care is unknown. The aim of the present study is to determine the safety and effectiveness of a 0h/1h hs-cTnT protocol (Figure, center) which also incorporates patient history and ECG, when implemented in routine care.

Methods

In this before-and-after implementation study (ClinicalTrials.gov: NCT03421873), all patients ≥ 18 years with a chief complaint of chest pain and possible acute coronary syndrome (ACS) will be included at the EDs of Lund, Helsingborg and Ystad in Skåne, Sweden (map on far right). The EDs of Malmö and Kristianstad will be concurrent controls. Before implementation, most ED physicians ordered hs-cTnT tests at 0 and 3 h. Exclusion criteria are STEMI, a non-Swedish citizenship or leaving against medical advice. Patient outcomes will be compared in the 10-month periods before and after the implementation (starting Feb 1, 2018), and the primary outcomes are acute myocardial infarction/all-cause death within 30 days and the ED length of stay in patients discharged from the ED. Secondary outcomes include the proportion of patients discharged from the ED and of non-ACS-patients admitted to the cardiac care unit.



Conclusion

If a 0h/1h protocol implemented in routine care can rapidly identify a large proportion of chest pain patients suitable for early discharge, with no need for further cardiac testing, this may reduce ED and hospital crowding, objective testing, health care costs and will benefit both patients and the health care system.