

High-sensitivity assay gives more reassurance to chest pain patients

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For some time now, patients in Sweden's emergency clinics complaining of chest pain have been evaluated using the "high-sensitivity troponin T" assay. In a large-scale registry study published in the *Journal of the American College of Cardiology* scientists at Karolinska Institutet show how this more sensitive analytical method has improved evaluation for these patients. Since its introduction, fewer patients diagnosed with "unspecified chest pain" suffer a heart attack or die after being sent home.

Chest pain is one of the most common reasons for emergency medical care. Sometimes the pain can be related to a [heart attack](#), but most of the time the cause of the problem cannot be identified and most [patients](#) are sent home with an "unspecified [chest](#) pain" diagnosis. However, a few of these people will suffer a heart attack, others will have to undergo unplanned revascularisation, and still others will die within 30 days. The difficulty lies in ascertaining who these patients are when they go to an emergency unit with a chest pain complaint.

To rule out myocardial infarction, doctors normally check the patients' ECG and a blood test or the cardiac biomarkers [troponin](#) T or I. In recent years, however, a new and more sensitive assay has been introduced at Swedish hospitals. The [method](#) is called high-sensitivity troponin T, which has been shown by previous studies to be more diagnostically accurate, although whether this accuracy applies to clinical procedures has not been known.

To discover if high-sensitivity troponin T is associated with a lower incidence of cardiovascular events, the researchers conducted a large-scale registry study of 65,000 patients with unspecified chest pain who had been discharged from 16 Swedish emergency clinics between 2006 and 2013 in connection with the introduction of the new method.

They found that the risk of suffering a serious cardiovascular event within 30 days of returning home was much lower in patients discharged from an emergency clinic when the new method was in use than in those examined with the old one. The percentage of those subsequently suffering a heart attack, dying or undergoing unplanned revascularisation dropped from 0.9 to 0.6 per cent.

"Our results are of interest to other countries such as the USA, which is about to change its methods," says Per Svensson, associate professor and senior lecturer at Karolinska Institutet's Department of Medicine in Solna.

However, amongst the patients who had been discharged from hospital after being admitted for an unspecified chest pain diagnosis, the risk of suffering serious events increased after the change in method. In this group, 7.2 per cent of patients with the new method in use were affected, compared with 3.4 per cent who were examined in the former way. These particular patients also had a higher risk profile after the change in method.

"We may conclude from the results of our study that examination using high-sensitivity troponin is associated with fewer serious cardiac events and an improvement in risk profile for patients released from emergency clinics with unspecified chest [pain](#)," says Dr Svensson. "The opposite was observed in patients sent home after admission to hospital, which suggests that high-risk patients are identified and hospitalised more frequently. We therefore conclude that high-sensitivity troponin has

helped to improve the evaluation of [emergency](#) patients with unspecified [chest pain](#)."

More information: Atosa Nejatian et al, Outcomes in Patients With Chest Pain Discharged After Evaluation Using a High-Sensitivity Troponin T Assay, *Journal of the American College of Cardiology* (2017). [DOI: 10.1016/j.jacc.2017.03.586](https://doi.org/10.1016/j.jacc.2017.03.586)

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