Ultrasound and a blood test can increase survival after myocardial infarction

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Two relatively simple methods, an ultrasound investigation and a blood test to measure the level of a substance known as BNP, can predict survival and future heart failure following acute coronary syndromes. This is the conclusion of a thesis presented at the University of Gothenburg, Sweden.

Acute coronary syndromes, such as myocardial infarction and unstable angina, are among the most common causes of emergency medical care and death in Sweden for both women and men.

"The ability to predict the future course of the syndrome in a patient may improve the possibility of providing extra preventative treatment for those with the highest risks. Or, and this may be more important, the possibility of following these patients with more frequent check ups in order to detect early whether the patient's health is deteriorating", says biomedical scientist, Anita Persson.

The study on which the thesis is based showed that elevated levels of B-type natriuretic peptide (BNP) in the blood were associated not only with an impaired ability of the heart to pump blood, but also with the risk of rehospitalisation due to heart failure following acute coronary syndromes , and premature death. One noteworthy finding was that the correlation between high BNP and future risk was present also for those patients who did not show signs of heart failure during the first acute episode.

The other method that Anita Persson has evaluated is the use of

ultrasound, in a technique known as "Doppler echocardiography", to assess leakage at one of the valves in the heart. It proved to be the case that the ultrasound investigation can predict not only increased mortality but also increased rehospitalisation due to heart failure.

She found, by comparing many different properties of the function of the heart determined by Doppler echocardiography, that an increased volume of the left ventricle and increased pressure during the filling phase of the heart action or increased stiffness of the ventricle were associated with a poorer prognosis and an increased risk of complications.

The study is based on a large group of patients with acute coronary syndromes who received care between September 1995 and March 2001 in the Coronary Care Unit at Sahlgrenska University Hospital. "Including the echocardiography variables on their own or in combination with the level of BNP in the risk assessment can be a relatively simple means of identifying high-risk patients and those who have the best preconditions for avoiding complications", says Anita Persson.

Provided by University of Gothenburg