

Natriuretic Peptides in Diagnosing Heart Failure

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Summary and Conclusions

TECHNOLOGY AND TARGET GROUP Approximately 200 000 people in Sweden have symptomatic heart failure. In addition, about equally as many have asymptomatic, impaired cardiac function. A method that can facilitate diagnosis of heart failure involves measuring the concentration of BNP or NT-proBNP peptides in the blood. More peptides are produced when the ventricular muscles of the heart are subjected to greater load. Since NT-proBNP is stable at room temperature for up to 3 days after blood samples have been taken, immediate laboratory analysis is not required. BNP, however, can be analysed by using a rapid bedside test that gives the results within 15 minutes. Since both sample taking and analysis are readily performed, the method can be used in primary care provided that the analytical equipment is available. The potential target group for the method is estimated to be considerably more than 20 000 patients per year in Sweden.

PRIMARY QUESTION To what extent does measuring the blood concentration of BNP or NT-proBNP facilitate diagnosis of heart failure?

PATIENT BENEFIT Several studies have shown that natriuretic peptide testing has a high negative predictive value, which means that one can rule out with considerable certainty that a patient has heart failure. The positive predictive value of the test is not nearly as high. Hence, when elevated values were found, it was necessary to complement the test with an assessment of cardiac function to determine whether or not the patient had heart failure.

ECONOMIC ASPECTS The cost of taking a sample and analyzing BNP or NT-proBNP is approximately 200 to 350 Swedish kronor (SEK). By comparison, the cost for echocardiography is 1500 to 2500 SEK.

SBU's appraisal of the evidence

Moderately strong scientific evidence (Evidence grade 2)* shows that BNP or NT-proBNP can be used, with good reliability, to rule out heart failure. However, evidence remains insufficient concerning the cost effectiveness of the method relative to other methods of diagnosing heart failure (Evidence grade 4)*.

**Grading of the level of scientific evidence for conclusions. The grading scale includes four levels; Evidence grade 1 = strong scientific evidence, Evidence grade 2 = moderately strong scientific evidence, Evidence grade 3 = limited scientific evidence, Evidence grade 4 = insufficient scientific evidence.*

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P.O. Box 5650, SE-114 86 Stockholm, Sweden • alert@sbu.se

This summary is based on a report prepared at SBU in collaboration with:

- Prof. **Ulf Dahlström** (expert), Linköping University Hospital, Linköping,
- Prof. **Karl Swedberg** (reviewer), Sahlgrenska University Hospital, Göteborg.

The complete report is available only in Swedish.