

Effectiveness and cost-effectiveness of serum B-type natriuretic peptide testing and monitoring in patients with heart failure in primary and secondary care: an evidence synthesis, cohort study and cost-effectiveness model

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Plain English summary

Serum BNP testing/monitoring in heart failure patients

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Plain English summary

Heat failure (HF) affects about 500,000 people in the UK. A hormone secreted by the heart [B-type natriuretic peptide (BNP)] is raised in people with HF; higher BNP indicates more severe HF. People with HF may benefit from BNP being measured regularly, as doctors can increase medication doses to lower BNP. However, more intensive treatment may cause side effects. It is uncertain whether or not BNP monitoring works for patients and whether or not it represents value for money to the NHS.

In step 1, we combined the results of previous studies of BNP monitoring to determine which patients benefit from BNP monitoring. In step 2, to overcome the limitation that studies recruited patients who were mainly younger and healthier, we analysed data that were collected routinely in the NHS that described people diagnosed as having HF between 1 April 2005 and 31 March 2013 and their health outcomes. In step 3, we combined findings from steps 1 and 2 to find out how the cost-effectiveness of BNP monitoring varies according to patients' characteristics.

We found that BNP monitoring is cost-effective in patients who are < 75 years old and have poor heart function. However, the effectiveness was not related to the reduction in BNP achieved or more intensive medication. BNP monitoring is not effective in older patients or those with good heart function. BNP monitoring was carried out in non-UK hospitals using a variety of methods, for example at different time intervals and with different target levels. In the UK, general practitioners care for NHS patients with HF unless they need hospital treatment. Therefore, it is not clear how BNP monitoring should be implemented and whether or not it would work in the NHS.

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