

Heart editorial

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Diagnosing heart failure: challenges in primary care

Heart failure (HF) is a common, costly and treatable clinical syndrome.^{1,2} Over 920,000 people in England are living with the condition and 3-4% of the NHS budget is spent on HF services.³ Large clinical trials have established the clinical and cost-effectiveness of disease-modifying drugs and device therapies in improving quality of life, reducing hospitalisations and increasing survival for patients with HF with reduced ejection fraction.^{4,5} The same prognostic benefit was not seen in HF with preserved ejection fraction but diagnosis remains important to explain patients' symptoms. In both types of HF, diuretics are effective in reducing fluid overload and exercise-based cardiac rehabilitation is beneficial once patients are stable.

Timely and accurate diagnosis is key to accessing appropriate, evidence-based treatment. People with HF initially experience symptoms of breathlessness, fatigue and ankle swelling which progress over time.^{1,2} Guidelines recommend that people presenting to primary care with suspected HF should have a natriuretic peptide blood test. If the level is raised, referral for echocardiography and specialist assessment is needed to confirm the diagnosis of HF or determine an alternative cause for the person's symptoms. However, a first diagnosis of HF is often made in hospital which may be distressing for patients, costly to the health service and usually denotes progression to a later stage of disease. Most patients with HF have seen their general practitioner (GP) prior to receiving a diagnosis and there may be missed opportunities to manage patients earlier.^{6,7}

In this issue of *Heart*, Hayhoe and colleagues report the findings of their observational study using routinely collected primary care records, linked to secondary care data, to explore the diagnostic pathway for people presenting to primary care with symptoms suggestive of HF.⁸ The period of study was 2010 to 2013 and the authors report lengthy time delays between patients consulting their GP with symptoms and having a diagnostic investigation (natriuretic peptide test or echocardiogram), and a further delay in referral for specialist assessment. Patients who were older, female and socioeconomically deprived waited the longest for referral and diagnosis. Those with co-existing cardiovascular conditions such as atrial fibrillation were diagnosed more quickly but concomitant chronic obstructive pulmonary disease (COPD) was associated with a longer time interval between symptomatic presentation and HF diagnosis.

The delay in diagnosis of HF in primary care is likely to be multifactorial. Symptoms such as breathlessness are very common, and can have many causes including chest infection, asthma, anxiety, obesity or anaemia. Patients with HF also have other diseases and take multiple medications; in a recent analysis of primary care data in England, two third of patients with HF had at least three other long-term conditions.³ The presence of multimorbidity and polypharmacy could lead clinicians to attribute symptoms to other pre-existing conditions such as COPD or the side effects of medication, whilst a history of previous cardiovascular disease may be more likely to raise the suspicion of HF earlier.

The time interval explored by Hayhoe and colleagues followed the release of the National Institute for Health and Care Excellence (NICE) chronic HF guideline in 2010. A previous study by the same group, also using primary care data from 2010 to 2013, showed people presenting with symptoms of HF rarely followed the NICE-recommended pathway.⁶ Both studies provide important insights into the primary care component of the HF diagnostic pathway and further work on an updated dataset would be welcome. Organisational changes such as the creation of GP-led clinical commissioning groups as a result of the Health and Social Care Act in 2012 and more recent guidelines, such as the European Society of Cardiology HF guideline in 2016⁴ and the NICE chronic HF guideline update in 2018⁵, may have impacted on current HF care pathways.

The diagnostic algorithm recommended by NICE in the 2018 guideline update is shown in Figure 1. The previous recommendation that people with a history of myocardial infarction should be referred directly for echocardiography and specialist assessment has been removed. This simplifies the pathway so everyone with symptoms suggestive of HF should have a natriuretic peptide blood test. N-terminal pro B-type natriuretic peptide (NT-proBNP) and B-type natriuretic peptide (BNP) are the two main tests available in clinical practice and perform similarly; however, NT-proBNP is more stable over time and is now the preferred test recommended by NICE for HF diagnosis.⁵

GPs need to be aware of the guideline recommendations on natriuretic peptides and have access to the blood test to be able to manage people presenting with suspected HF appropriately. The Pumping Marvellous Foundation (the patient-led HF charity) launched their 'One Simple Blood Test' campaign as part of HF Awareness Week 2018 to encourage GPs to use natriuretic peptide testing to diagnose HF earlier. Patients and clinicians created videos which were shared on social media to raise awareness of the need for testing.

The NICE 2018 guideline states that if the NT-proBNP level is above 400pg/ml, the patient should be referred for echocardiography and specialist assessment to be seen within six weeks. If the NT-proBNP level is above 2,000pg/ml, this signifies a more advanced stage of disease, requiring prompt management so the patient should be seen within two weeks. This time frame mirrors the 'two-week-wait' cancer referral pathways introduced to expedite diagnosis. The time scales are reliant on GPs having access to echocardiography

and specialist cardiology services which in many areas can involve waiting times outside those recommended in the guideline.

The study by Hayhoe and colleagues used routinely collected GP data from the Clinical Practice Research Datalink. This type of dataset provides a large, representative sample of patients and reflects contemporary practice in primary care. However, the data is entered as part of routine clinical care, rather than for research purposes, and is limited by the choice of coding used by GPs during consultations with patients. Some clinicians may not code all symptoms and only enter a confirmed diagnosis. The study also did not explore interim diagnoses and treatment. For example, a patient with breathlessness may have had a correct diagnosis of community acquired pneumonia and been successfully treated with antibiotics before a separate presentation with HF later on.

Primary care has a vital role in HF diagnosis to allow timely initiation of evidence-based treatments which improve both patient outcomes and resource use in the healthcare system. More work is required to understand GP consultations with people presenting with HF symptoms and identify organisational barriers such as access to investigations and secondary care waiting times which may contribute to delay. GP-led research is needed to develop interventions which are likely to be effective in improving diagnosis within the complexity of primary care.

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