Cardiovascular disease

Patients with heart failure not being diagnosed in primary care

Only a quarter of patients with symptoms suggestive of heart failure are investigated and referred by GPs in accordance with NICE guidelines, a UK study has shown. Nearly 80% of heart failure patients were diagnosed in hospital.

The investigators, from Imperial College, London, extracted data on patients diagnosed with heart failure between 1 January 2010 and 31 March 2013, using the Clinical Practice Research Datalink. This database contains electronic records from 7% of general practices in England. Primary care consultations are linked to hospital admissions data and national death registrations for patients registered with participating practices.

The investigation and referral pathways followed by patients from first presentation with symptoms suggestive of heart failure through to diagnosis were traced.

Overall, 36,748 patients had a diagnosis of heart failure recorded that met the inclusion criteria. The vast majority, 29,113 (79.2%) had the diagnosis of heart failure first recorded in hospital. Of these, more than a third (37%) had consulted a GP in the previous year with recorded heart failure symptoms.

In the five years prior to diagnosis, 15,057 patients (41.0%) had a GP consultation with one of three key heart failure symptoms recorded (breathlessness, fatigue and ankle swelling). The most common symptom was breathlessness, recorded in 8 out of 10 cases. A further 17,724 patients (48.2%) attended for another reason and had no symptoms of heart failure recorded. In addition, 3,967 patients (10.8%) did not see their GP.

Only 24% of those with recorded heart failure symptoms followed the NICE pathway for investigation and referral (echocardiogram and/or serum natriuretic peptide test and specialist referral), while 44% had no echocardiogram, natriuretic peptide test or referral.

The early identification of patients with heart failure is important to initiate appropriate and prognostically important interventions. However, identifying such patients in primary care is challenging.

This study found that only a quarter of patients with symptoms suggestive of heart failure follow the pathway recommended by NICE guidelines. As such the study authors conclude that there are likely to be missed opportunities for the earlier diagnosis of heart failure in primary care.

However, this was an observational study and dependent on accurate READ code entry for the recording of symptoms. The authors also acknowledge the lack of specificity of these symptoms in the diagnosis of heart failure.

The authors conclude that patients follow various pathways to the diagnosis of heart failure. 'Most continue to be diagnosed in hospital despite many presenting earlier in primary care with suggestive symptoms.

'Further research is needed to understand how GPs react to patients presenting with these symptoms and how they use current guidelines: there appears to be considerable opportunity to improve the early management of these patients in primary care,' they state.

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Bottle A, Kim D, Aylin P et al. Routes to diagnosis of heart failure: observational study using linked data in England. *Heart* 2018;104:600-05

Diabetes

C-peptide testing can identify risk of hypoglycaemia in insulin-treated type 2 diabetes

Low levels of C-peptide (rCP) were associated with greater glucose variability and hypoglycaemia in type 2 diabetes patients on insulin, a UK study has found.

First, 17 patients with type 2 diabetes who had low rCP levels (< 200 pmol/L), and by inference low endogenous insulin secretion, were matched by age and sex with 17 controls who had normal rCP levels (> 600 pmol/L). Both groups contained 11 men (65%), had an average age of 72, and an average HbA_{1c} of 8.7%. Those with low rCP levels had progressed more rapidly to insulin treatment, received higher insulin doses, been more likely to receive basal bolus insulin therapy and have positive islet cell autoantibodies than the control group, with preserved endogenous insulin secretion. Each participant underwent continuous glucose monitoring for at least three consecutive days.

The proportion of individuals demonstrating sustained hypoglycaemia was 94% in the low rCP group and 41% in the normal rCP control group. Hypoglycaemia was defined as glucose of 4 mmol or below for 20 minutes or more.

Glucose variability was greater in the low rCP group compared with controls (SD of glucose measurements 4.15 vs 3.01 mmol/L; P < 0.001).

The rate of hypoglycaemia in the low rCP group was 5.5 (95% CI: 4.4-6.7) vs 2.1 episodes/person/week (95% CI: 1.4-2.9) in the controls; P = 0.004. Total duration of hypoglycaemia was