Heart failure in primary care

Heart failure is a complex syndrome that results from any structural or functional cardiac disorder that impairs the ability of the heart to function as a pump. It affects, depending on definition, between one to five per cent of the UK – half a million to three million people (Cleland et al, 2001). About 63,000 new cases are reported in the UK every year (Cowie et al, 2000).

**Diagnosis** Heart failure is usually associated with dyspnoea, fatigue and fluid retention. Symptoms alone cannot be relied on to make the diagnosis and a careful history and physical examination need to be supplemented by further investigations (Fig 1).

The National Service Framework for Coronary Heart Disease states that every general practice should be able to identify patients with a confirmed diagnosis of heart failure and offer them appropriate treatment, education and information (Department of Health, 2000).

**Compiling a heart failure register**

- Use the coronary heart disease (CHD) registers to identify those patients who have echocardiograms that show left ventricular systolic dysfunction (LVSD);

- Add to the register newly diagnosed patients who are proven to have LVSD;

- Search the practice computers for patients on angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers, bisoprolol, carvedilol and spironolactone. Review their records to see if they have evidence of LVSD on echocardiogram;

- When summarising medical records, look for echocardiogram results.

The heart failure register should only include patients with LVSD and an abnormal echocardiogram (CHD Collaborative, 2002). However, not all patients have an echocardiogram, so patients should be categorised as:

- Echocardiogram normal;

- Echocardiogram shows left ventricular systolic dysfunction (LVSD);

- Echocardiogram not done;

- Echocardiogram indicated;

- Echocardiogram unlikely to be clinically beneficial.

**Priorities for echocardiography** Making an accurate diagnosis of heart failure and determining its aetiology can be difficult as its signs and symptoms are often non-specific. When patients have not had an echocardiogram, it is vital to review the evidence for their diagnosis and investigate them according to clinical need.

Priorities for echocardiography are:

- **Priority 1:** Patients have shortness of breath and would benefit from further investigation;

- **Priority 2:** Patients have had myocardial infarction;

- **Priority 3:** Patients on loop diuretics or digoxin who are labelled as having heart failure. They need assessment to see if further investigation would be of clinical benefit;

- **Priority 4:** Patients on loop diuretics or digoxin but not labelled as having heart failure (CHD Collaborative, 2002).

**Diastolic heart failure** Patients with symptomatic heart failure who have normal left ventricular systolic function are said to have diastolic dysfunction. This results from impaired myocardial relaxation with increased stiffness in the ventricular wall. These patients benefit symptomatically from diuretics. They should not be added to the heart failure register but may benefit from being on a separate register.

**Treatment of heart failure** The aims are to:

- Improve symptoms or slow their deterioration;

- Reduce mortality;

- Reduce frequency of cardiac events and admissions to hospital;

- Avoid adverse effects from treatment;

- Improve end-of-life experience for patients and carers.

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**FIG 1. ALGORITHM FOR THE DIAGNOsis OF HEART FAIluRE RECOMMENDED BY THE EUroPEAN SOCIETY OF CARdIOLOGY**

Heart failure suspected because of symptoms and signs

<table>
<thead>
<tr>
<th>Assess presence of cardiac disease by electrocardiography, chest radiography or natriuretic peptides (where available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal: heart failure unlikely</td>
</tr>
<tr>
<td>Abnormal: imaging by echocardiography</td>
</tr>
<tr>
<td>Normal: heart failure unlikely</td>
</tr>
<tr>
<td>Abnormal: Assess aetiology, degree, precipitating factors and type of cardiac dysfunction. Additional diagnostic tests where appropriate</td>
</tr>
<tr>
<td>Choose treatment</td>
</tr>
</tbody>
</table>

*The Task Force on Heart Failure, 2001*
Pharmaceutical needs Many patients with heart failure are on multiple and complex medicine regimens. Patients often have little or no understanding of their medicines, and are at risk of developing side-effects and possible drug interactions. These all hamper patient compliance with treatments.

Biochemical observation should be ongoing for patients using diuretics, spironolactone and ACE inhibitors. Patients should have their blood pressure, renal function and serum potassium measured to detect possible side-effects.

These measurements should be repeated a week after initiation of treatment and a week after each increase in dosage. Patients who develop renal insufficiency or hypotension should have their circulating fluid volume reassessed.

For patients who become hypovolaemic because of diuresis, the dose of any diuretic should be reduced and the ACE inhibitors may be tried again. These patients, and all those who fail a second trial of ACE inhibitors or who develop hyperkalaemia as a result of taking ACE inhibitors, should be referred to a specialist cardiologist.

Non-pharmacological needs Patients need to be aware of their condition and the implications it has for their lives. Also, they need to be aware of their symptoms and when these are deteriorating. This requires education and support, so that they can undertake self-monitoring and management. Lifestyle changes may be required, such as patients changing their diet and fluid intake, monitoring their weight, balancing exercise and rest, stopping smoking and moderating alcohol intake.

Some patients with heart failure may still be working and they may have to change their occupation or may be unable to work at all. Therefore, support and counselling are very important.

Role of the practice nurse When delivering the chronic disease management and audit envisioned by the National Service Framework for Coronary Heart Disease, practice nurses are the key members of the primary health care team. They need training and regular updates. They may work to agreed protocols, for example those for secondary prevention annual reviews (Box 1), which may involve the use of clinical decision support systems. Interventions should be recorded on standardised templates to help to facilitate audit.

The future In the UK, the National Institute for Clinical Excellence has commissioned guidelines for the management of patients with chronic heart failure.

These will provide advice on effective care using evidence from clinical trials and economic analyses, and will update Chapter 6 of the NSF for CHD. The publication date is expected to be August 2003.

Box 1. Secondary prevention annual

This review includes:
- Lifestyle assessment, and advice on smoking, alcohol, diet and exercise;
- Blood pressure (should be less than 140/85mmHg);
- Annual cholesterol measurement;
- Medicines review;
- Review of diabetic control (where appropriate).

Other factors to consider:
1. Symptom assessment:
   - Breathlessness, ankle oedema, angina, palpitations, fatigue and lethargy;
   - Level of activity, walking distance and social needs.
2. Examination:
   - Height, weight and body mass index;
   - Pulse rate and rhythm (if patient is in atrial fibrillation consider warfarin, aspirin and rate-limiting medicines);
   - Blood pressure (BP) – aim for less than 140/85mmHg.

   If systolic BP is less than 100mmHg, review prescribed medicines;
   - Listen to heart sounds and lungs;
   - Assess for elevated jugular venous pressure (JVP);
   - Observe for oedema.
3. Investigations:
   - Urea and electrolytes, full blood count, creatinine, fasting lipids and glucose, thyroid and liver function tests to diagnose anaemia, renal, thyroid or hepatic disease, or diabetes.
4. Lifestyle:
   - Discuss salt restriction;
   - Exercise (which can provide a number of benefits, including a reduction in neurohormonal activation).
5. Vaccinations:
   - Influenza vaccine;
   - Pneumococcal vaccine.
6. Review and discuss medicines compliance with:
   - ACE inhibitors – maximum tolerable dose;
   - Beta-blockers;
   - Spironolactone;
   - Antiplatelet drugs.

Advise on avoidance of non-steroidal anti-inflammatory drugs (NSAIDs) with ACE inhibitors as this combination can increase the risk of renal damage.

7. Patient education and support.
8. Discuss prognosis and palliative care for severe heart failure if appropriate (ChD Collaborative, 2002).