10-minute consultation

Management of diastolic heart failure in older adults

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This is part of a series of occasional articles on common problems in primary care

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The *BMJ* welcomes contributions from general practitioners to the series

BMJ 2004;328:1114

A 69 year old woman has come to you for follow up after having attended a hospital's emergency department. She has had progressive dyspnoea and undue tiredness for more than six months. Recently, her dyspnoea has got worse. At the emergency department her blood pressure and heart rate were high, and a chest radiograph showed mild pulmonary oedema. A diagnosis of heart failure was made. Her symptoms improved after treatment with intravenous furosemide and metoprolol. An echocardiography later showed her to have a left ventricular ejection fraction >55%.

What issues you should cover

Establish the diagnosis of heart failure—The signs and symptoms of diastolic heart failure are similar to those of systolic heart failure. Keep in mind that as people age they often restrict their physical activity in response to worsening symptoms, and a distended neck vein, if present, is the most reliable sign of volume overload. Inquire about modifiable risk factors for heart failure (such as hypertension, coronary artery disease, and diabetes), precipitating factors for decompensation (such as anaemia, hyperthyroidism, tachyarrhythmias, non-compliance with diet or drugs), and conditions that can mimic heart failure (such as undue tiredness in depression or dyspnoea in pulmonary conditions). Determine her functional class according to the New York Heart Association classification. Obtain full blood count, including serum glucose and electrolytes, and renal, liver, and thyroid function tests, urinalysis, a 12 lead electrocardiogram, and a chest radiograph. Confirm your clinical diagnosis of heart failure before referring her for echocardiography.

Establish left ventricular diastolic dysfunction—If echocardiography shows preserved systolic function you will be able to make a probable diagnosis of diastolic heart failure, also known as diastolic dysfunction. However, a more specific diagnosis would require a documentation of an abnormal left ventricular relaxation pattern. This is often determined by a reduced ratio of early (E) to late or atrial (A) ventricular filling velocities by Doppler echocardiography (E:A<0.5). The E:A ratio is often reduced (<1) in elderly adults and normal (>1) in cases of advanced diastolic heart failure and is difficult to assess in patients with atrial fibrillation. Currently there is no consensus about the diagnostic criteria for diastolic heart failure.

What you should do

- Diastolic heart failure is common in elderly people and is associated with high morbidity and mortality. However, there is little evidence from large randomised trials to guide treatment for the disorder.
- Aim to control her blood pressure to <140 mm Hg systolic and <85 mm Hg diastolic. Begin treatment with an angiotensin converting enzyme inhibitor or an angiotensin receptor blocker. Add a ß blocker if she has coronary artery disease or atrial fibrillation. Be cautious in prescribing diuretics, as excessive diuresis may reduce stroke volume and cardiac output.
- Use digitalis only if symptoms persist in spite of other drugs. Digitalis should be used with caution in patients taking amiodarone, ß blockers, or calcium channel blockers.
- Explain the diagnosis, prognosis, and treatment to the patient. Discuss dosages and costs of drugs and the importance of compliance.
- Discuss warning symptoms. Advise her to check her weight daily. Weight gain of 1-2 kg over two or three days is an early sign of fluid overload. Patients in whom this occurs should take extra doses of diuretics and, if their baseline weight is not regained in two to three days, should see their doctors.
- Counsel her on salt and fluid restriction, smoking cessation, stopping or cutting down on alcohol consumption, avoidance of non-steroidal anti-inflammatory drugs, and a suitable level of physical activity, as tolerated.
- Refer her for cardiac catheterisation with coronary arteriography if she complains of angina and is a candidate for revascularisation.
- Refer her to a cardiologist if you cannot establish a diagnosis of heart failure, if symptoms persist after treatment, if you suspect valvular heart disease as the primary cause of heart failure, or if you are uncomfortable with treating her with angiotensin converting enzyme inhibitors (in renal insufficiency) or ß blockers (in chronic obstructive lung disease).

AA has received funding from the National Institutes of Health for research into heart failure and use of ß blockers in elderly people.

Useful reading

European Study Group on Diastolic Heart Failure. How to diagnose diastolic heart failure. *Eur Heart J* 1998;19:990-1003

Vasan RS, Levy D. Defining diastolic heart failure: a call for standardized diagnostic criteria. *Circulation* 2000;101:2118-21

Hunt SA, Baker DW, Chin MH, Cinquegrani MP, Feldman AM, Francis GS, et al. ACC/AHA guidelines for the evaluation and management of chronic heart failure in the adult. *J Am Coll Cardiol* 2001;38:2101-13. (The full guidelines are available on www.acc.org and www.americanheart.org)

Remme WJ, Swedberg K. Guidelines for the diagnosis and treatment of chronic heart failure. *Eur Heart J* 2001;22:1527-60