Annex 4

Practical guidance: Use of beta blockers in patients with heart failure with reduced ejection fraction[60]

Indications

- First line treatment, along with ACE inhibitors.

Contraindications

- asthma
- heart block or heart rate <60/min
- persisting signs of congestion, hypotension/low blood pressure (systolic <90 mm Hg), raised jugular venous pressure, ascites, marked peripheral oedema.

When there is no suitable alternative, it may be necessary to use a beta blocker for a patient with HF who has well-controlled asthma or chronic obstructive pulmonary disease (without significant reversible airways obstruction). The beta blocker should be initiated at a low dose by a specialist and the patient should be closely monitored for adverse effects.[5]

Cautions/seek specialist advice

- severe (NYHA Class IV) HF
- current or recent (<4 days) exacerbation of HF, eg hospital admission with worsening HF.

Drug interactions to look out for

- verapamil/diltiazem (calcium channel blockers should be discontinued unless absolutely necessary and diltiazem and verapamil are generally contraindicated in HF.
- digoxin, amiodarone.

Starting and target doses

Beta blocker	Starting dose	Target dose
bisoprolol	1.25 mg once daily	10 mg once daily
carvedilol	3.125 mg twice daily	25–50 mg twice daily
nebivolol	1.25 mg once daily	10 mg once daily

Only the drugs listed above have UK formulations shown to reduce mortality or morbidity.

How to use beta blockers

- Start with a low dose (*see starting and target doses*) and double the dose at not less than two-weekly intervals.
- Aim for the target dose or, failing that, the highest tolerated dose.
- Monitor heart rate, BP and clinical status (symptoms, signs, especially of congestion, body weight).
- Check blood urea, creatinine and electrolytes one to two weeks after initiation and one to two weeks after final dose titration.
- When to stop uptitration/reduce dose/stop treatment (*see problem solving*).
- A specialist HF nurse may assist with patient education, follow up (in person/by telephone), biochemical monitoring and dose uptitration.

Advice to the patient

- Explain the expected benefits, ie treatment is given to improve symptoms, to prevent worsening of HF thereby avoiding hospital admission and to increase survival.
- Symptomatic improvement may develop slowly after starting treatment, taking three to six months or longer.
- Temporary symptomatic deterioration may occur during the initiation/uptitration phase.
- Advise patients to report deterioration and that deterioration (tiredness, fatigue, breathlessness) can

usually be easily managed by adjustment of other medication; patients should be advised not to stop beta blocker therapy without consulting their physician.

- To detect and treat deterioration early, patients should be encouraged to weigh themselves daily (after waking, before dressing, after voiding, before eating) and to increase their diuretic dose should their weight increase, persistently (for longer than two days), by >1 kg over three days.

Problem solving

Worsening symptoms/signs (eg increasing dyspnoea, fatigue, oedema, weight gain)

- If there is increasing congestion, increase the dose of diuretic and/or halve the dose of beta blocker (if increasing diuretic doesn't work).
- If marked fatigue (and/or bradycardia - *see low heart rate*) halve dose of beta blocker (rarely necessary).
- Review patient in one to two weeks; if not improved seek specialist advice.
- If there is serious deterioration halve the dose of beta blocker or stop this treatment (rarely necessary); seek specialist advice.

Low heart rate

- If the heart rate is <50 beats/min with worsening symptoms halve the dose of beta blocker or, if there is severe deterioration, stop beta blocker (rarely necessary).
- Review the need for other heart rate slowing drugs, eg digoxin, amiodarone, diltiazem/verapamil (diltiazem and verapamil are generally contraindicated in HF).
- Arrange an ECG to exclude heart block.
- Seek specialist advice.

Asymptomatic low blood pressure

- does not usually require any change in therapy.

Symptomatic hypotension

- If the patient has dizziness, light headedness and/or confusion and low BP reconsider need for nitrates, calcium channel blockers and other vasodilators. Calcium channel blockers should be discontinued unless absolutely essential (eg for angina or hypertension).
- If there are no signs/symptoms of congestion consider reducing diuretic or ACE inhibitor dose.
- If these measures do not solve the problem seek specialist advice.

Reproduced from McMurray J, Cohen-Solal A, Dietz R, Eichhorn E, Erhardt L, Hobbs FD, et al. Practical recommendations for the use of ACE inhibitors, beta blockers, aldosterone antagonists and angiotensin receptor blockers in heart failure: putting guidelines into practice. Eur J Heart Fail. 2005;7(5):710-2, with permission from John Wiley and Sons[60]