Rate Control in Chronic Heart Disease

Introduction: There is a wealth of evidence that controlling the ventricular rate in patients with heart disease can improve prognosis as well as reducing hospital admissions. We should endeavour to try to control the heart rate as part of our view of secondary prevention.

The medications shown below should be initiated in sequence, with the addition of second and third line medications to achieve the desired rate. If not tolerated the first agent should be discontinued and the second line medication commenced instead. Nearly all the agents below have a blood pressure as well as rate controlling function, the blood pressure should be assessed prior to each up titration. A history of symptoms of postural hypotension should also be as taken and caution should be shown in up titration if present.

Beta-Blockers: These should not be used in patients who have shown allergic response. They should be used with caution in patients previously diagnosed with asthma. People previously diagnosed with Chronic Obstructive Lung Disease or Peripheral Vascular disease can use beta-blockers. If co-morbidity shows signs of deterioration with initiation, or up titration, then consider stepping down or discontinuing the beta blocker in favour of a second line medication.

Digoxin: Digoxin is a medication which falls in and out of favour however has a role in the management of rate control in atrial fibrillation. It is less effective in controlling the heart rate in the active person however can be of value in people who are more sedate and where hypotension is an issue. It is very dependant on serum potassium levels and electrolytes should be routinely assessed. When reviewing patients serum digoxin levels are rarely of value in primary care however symptoms of visual halos, nausea and palpitations should elucidated and if present the dose reduced.

Ivabradine: Do not use if the heart rate if below 60bpm of if there is sino-atrial block. It has no role in patients with persistent or permanent atrial fibrillation. It should not be used in moderate to severe heart failure, unstable angina or at the time of acute infarction.

Ischaemic Heart Disease Target heart rate 50-60bpm			**Left Ventricular Systolic Dysfunction** Target Heart Rate 60-70bpm	**Persistent or Permanent Atrial Fibrillation** Target Mean Heart Rate 70-80 bpm		
Concurrent Left Ventricular Systolic Dysfunction		**No Left Ventricular Systolic Dysfunction**	Intervention with ACE-I and Beta-blockers is preferred therapy	**Concurrent Left Ventricular Systolic Dysfunction**		**No Left Ventricular Systolic Dysfunction**
First Line: Bisoprolol with slow up titration to 10mg		First Line: Bisoprolol with slow up titration to 10mg	First Line: Bisoprolol with slow up titration to 10mg	First Line: Bisoprolol with slow up titration to 10mg		First Line: Bisoprolol with slow up titration to 10mg
Second Line: Ivabradine with slow up titration to 7.5mg bd		Second Line: Diltiazem with slow up titration to 240mg	Second Line: Ivabradine with slow up titration to 7.5mg bd	Second Line: Digoxin with up titration to 250Mcg od		Second Line: Diltiazem with slow up titration to 240mg
		Third Line: Ivabradine with slow up titration to 7.5mg bd				Third Line: Digoxin with up titration to 250Mcg od

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