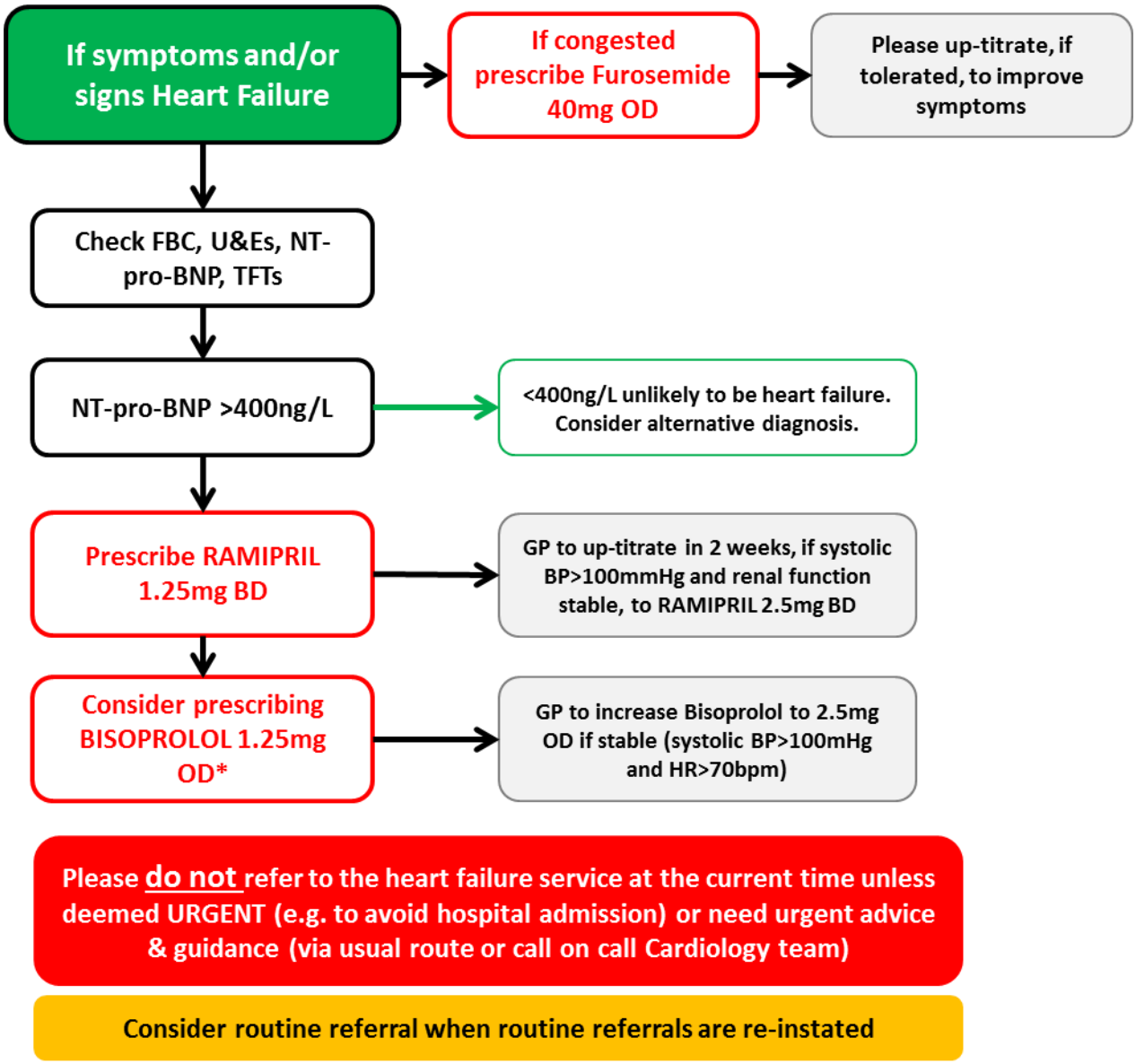
Leeds: COVID-19 adjusted heart failure pathway v2



*prescribe a beta-blocker if no contraindications and HR>70bpm.

Introduction

Chronic heart failure (CHF) is a major cause of death and disability. Early diagnosis and institution of evidence-based medical therapies in patients with

chronic heart failure due to reduced ejection fraction (HFrEF), substantially reduces mortality,[1] and unplanned hospitalisation.[2,3] In primary care the accurate diagnosis of chronic heart failure remains difficult.[4,5]

The Leeds Diagnostic Pathway

Elevated B-type natriuretic peptide (BNP) concentrations are associated with an adverse prognosis in the general population,[6,7] and in people with [8,9,10] and without [11,12,13] HFrEF. A pathway based upon NICE-guidelines,[14] beginning with a blood test in primary care to measure N-terminal-pro-B-type natriuretic peptide (NT-pro-BNP) to diagnose and manage CHF has formed the central part of the Leeds Integrated Heart Failure Service since 2012. The pathway includes three ranges for NT-pro-BNP. Data from Leeds, have shown that patients with an NT-pro-BNP concentration <400ng/L ('low') are unlikely to have HFrEF. Those with 400-2000ng/L ('intermediate') have a 30% chance of HFrEF and those with a level >2000ng/L ('high') a greater than 60% chance of HFrEF.[15] Long term follow-up from the Leeds cohort suggests that mortality is 20% at 12 months in those with a 'high' level' and around 7% in those with an 'intermediate' level. The Leeds pathway and the NICE guidelines therefore state that patients with a 'high' level should be seen and assessed in secondary care rapidly (within 2 weeks) with an echocardiogram whereas those with an intermediate level should be assessed but their need is less urgent.

Initiation, uptitration and optimisation of therapy

Following the confirmation of HFrEF, the initiation and uptitration of medical therapy including angiotensin-converting enzyme inhibitors (ACEi) and beta-blockers in Leeds is performed by a collaboration between primary and secondary-care based heart failure specialist nurses and primary care teams. The Leeds integrated approach leads to high penetration of agents and optimal doses with good outcomes in terms of hospitalisation and mortality.[1,16] Leeds data have also shown that there is a dose-related mortality benefit from both ACEi and beta-blockers. For each milligram increment of ACEi, there is a 5.5% reduction in mortality and for every milligram increment in beta-blocker

dose, there was a 6% reduction in mortality. The benefits are greater in patients with diabetes mellitus.[17]

The need for adjustment: the COVID-19 pandemic

The current clinical situation regarding the coronavirus pandemic has led us to review the pathways of care delivered by the Leeds Integrated Heart Failure Service due to challenges across the National Health Service in both secondary care, primary care and community settings. It is likely that specialist nurses will be called to other roles for the foreseeable future. We have therefore used our data to guide our approach in how the pathways can safely adjust to the current environment.

The temporary pathway (March 2020)

Most patients will eventually require secondary care input, mostly for an echocardiogram to provide a clear diagnosis. In the interim we propose that patients with an elevated NT-pro-BNP (>400ng/L) should receive an Angiotensin converting enzyme inhibitor (ACEi: e.g ramipril 1.25mg BD) or an Angiotensin receptor blocker (ARB: e.g. candesartan 4mg) and have this increased to a modest dose (aiming for 5mg daily of ramipril or 8mg candesartan) as described in the flow chart below. In those with congestion, a loop diuretic should be used starting at 40mg furosemide with slow uptitration as required to maintain decongestion.

Whether the dose of the ACEi or ARB should be increased further, or a beta-blocker added should be made on an individual basis, based upon the experience of the practitioner, the patient's co-morbidities and the presence of other indications. A beta-blocker for example may be particularly useful in patients with atrial fibrillation and a fast ventricular response (>100bts/min).

Many patients will already be taking an ACEi or a beta-blocker for other conditions. These tablets should be continued or their doses increased if this can be done safely. Other blood pressure-lowering agents can be reduced or stopped to allow uptitration of ACEi or beta-blockers.

Most patients will have undergone an assessment of renal function at the time of the NT-pro-BNP measurement. Unless patients have a marked impairment of renal function (eGFR <30ml/min) at baseline renal function checks could be performed at every other titration phase. For most patients following the flow chart outlined below, this means only one further check following achievement of the 2.5mg BD dose of ramipril.

Patients should be encouraged to keep a symptom and daily weight diary.

Currently no routine referrals are being accepted but provision has been made for urgent referrals. These will be triaged by a Consultant Cardiologist to either urgent face to face review with echo, telephone consult, advice and guidance (with discharge) or further test (on holding list). These processes may change as the COVID 19 pandemic evolves further.

References

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Version Control:

Pathway developed 25th March 2020 by LTHT in response to COVID-19. Final version 'Heart Failure Leeds Pathway COVID 19 adjusted (1)' - Agreed and published with NHS Leeds CCG 6TH April.

Pathway further amended by Alex Simms; Consultant Cardiologist, LTHT. Amended version agreed and published 29th April as 'COVID BNP Referral Pathway'. Name of document now changed to 'Heart Failure Leeds Pathway COVID 19 adjusted (v2).