



From the Clinical Director

We all know that the heart plays an essential physiological role in delivering oxygenated blood and nutrients to tissues and organs. Congestive Heart Failure (CHF), also commonly known as Congestive Cardiac Failure (CCF) happens when the heart muscle becomes weakened or damaged and cannot pump blood as efficiently as normal. There are many causes of CHF, but can include hypertension or ischaemia secondary to coronary heart disease (for example, after a myocardial infarction), post-viral myopathy, or drug-induced effects (e.g. cardiomyopathy secondary to cancer chemotherapy or clozapine treatment). Other factors which may contribute to heart failure include diabetes, cardiomyopathy, cardiac arrhythmias, valvular heart disease, pulmonary embolism, infection, anaemia, thyroid dysfunction, obesity, cigarette smoking, high dietary salt and saturated fat and lack of physical activity. Heart failure is known to cause significant economic burden and costs the health system in excess of \$1 billion/year. The prevalence of heart failure is on the rise and is substantially higher in rural and remote locations, with Aboriginal and Torres Strait Islander people 1.7 times more likely to develop heart failure compared to other Australians. The risk of developing heart failure rises significantly with age, with an incidence of over 10% for those aged >65 years, rising to > 50% for those aged >85 years.

The symptoms of heart failure often depend on the type and degree underlying cardiac dysfunction that is occurring. For example, heart failure may be classified as either systolic or diastolic and pertain to either the left or right sided dysfunction. Often times there is significant overlap of these classifications. Systolic heart failure refers to a weakened ability of the heart to contract normally whereas with diastolic heart failure, the ventricle loses its ability to relax and fill properly. Diastolic heart failure may also be referred to as heart failure with preserved left ventricular ejection fraction (HFPEF).

The hallmark symptoms of heart failure include breathlessness, fatigue and peripheral oedema. People with heart failure may also experience dizziness, palpitations, chest pain, cough, loss of appetite, constipation, nausea and weight gain.

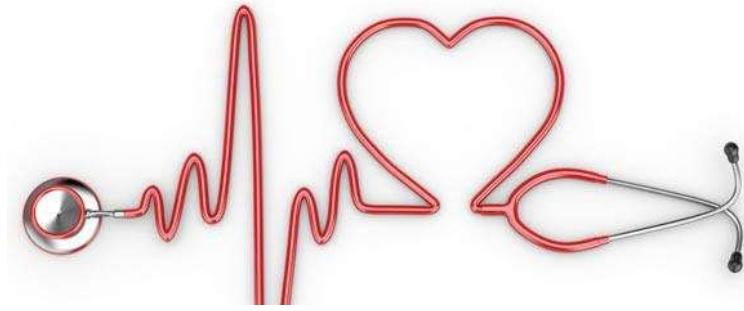
A diagnosis of heart failure is usually made on the on the basis of clinical signs and symptoms together with other tests including ECG, chest x-ray, thyroid function, renal function and liver function. An echocardiogram remains the most useful investigation for those with suspected heart failure as it provides evidence of structural abnormality and/or the type of cardiac dysfunction i.e. systolic vs diastolic. Many cases of heart failure may be asymptomatic or misdiagnosed and go undetected until the disease is more advanced. Once heart failure is diagnosed and classified, it this then given a grading of severity based on the New York Heart Association (NYHA) Functional Classification. Grading heart failure in this way helps to guide evidenced based treatment approaches resulting in better patient outcomes.

Hallmark symptoms of heart failure include breathlessness, fatigue and peripheral oedema.

Heart failure is associated with a high incidence of hospitalisation and mortality with approximately 20-50% of those diagnosed with heart failure dying within one year. The aims of treatment are to preserve cardiac function, maintain quality of life and reduce hospital admissions and mortality. Optimal management of heart failure requires a multi-disciplinary approach and may involve a combination of pharmacological, surgical and life-style interventions.

As CHF is a complex illness with a relatively poor prognosis and considerable morbidity that can severely compromise quality of life, management strategies need to be dynamic and responsive to the needs of the individual. There is a range of medications that are used in the management of heart failure, all of which can serve specific purposes in a wider treatment plan. The disease is characterised by periodic exacerbations and longitudinal clinical progression – the medications are associated with a range of serious adverse effects and drug interactions, and often require adjustments to accommodate the variability of symptoms. As many people with CHF are affected by multiple comorbidities, this represents an added level of complexity, meaning that there is a great deal of potential benefit to be gained from an RMMR. Please contact your Ward MM pharmacists to make arrangements to discuss this possibility for residents in your facility.

Dr Chris Alderman, Director of Clinical Excellence, Ward MM.



Feature Article:

Medicines used for congestive heart failure

Good quality evidence supports the use of pharmacological therapy in those with systolic heart failure. Diastolic heart failure (also known as heart failure with preserved ventricular ejection fraction), is more difficult to treat and pharmacological therapy has not been shown to improve survival in these patients. Regardless of the type of heart failure, it is important to identify and treat underlying co-morbidities that may cause or exacerbate heart failure. This may include treatment of pre-existing coronary heart disease, hypertension, valvular heart disease, arrhythmias, thyroid dysfunction and anaemia. Patients should be encouraged to maintain a healthy weight, undertake tailored exercise programs and eat a balanced diet low in salt and saturated fats and high in whole grains, fruits and vegetables.

Activation of the renin-angiotensin-aldosterone system is an important factor in the progression of heart failure. ACE inhibitors have been shown to be beneficial as first line therapy for all grades of systolic heart failure. ACE inhibitors improve symptoms, prolong survival and reduce the risk of hospital admissions. Hypotension is a concern when commencing ACE inhibitors, particularly in the elderly: start a low dose and gradually increased as tolerated. Other adverse effects associated with ACE inhibitors include persistent dry cough, renal impairment and hyperkalaemia. For patients who cannot tolerate ACE inhibitors, treatment with an angiotensin II receptor blocker (ARB) is recommended. ARBs are associated with a similar adverse effects as that of ACE inhibitor therapy.

Beta blockers are also recommended as first line therapy in conjunction with an ACE inhibitor or ARB for all grades of systolic heart failure. In Australia, there are currently four beta blockers approved for use in heart failure (carvedilol, bisoprolol, sustained release metoprolol and nebivolol). Beta blockers have the potential to transiently worsen heart failure initially. To minimise this risk therapy should be started at very low doses and only when heart failure is stable. Beta blockers may cause bronchospasm and exacerbate asthma and COPD. Special consideration may need to be given when prescribing beta blockers for these patient groups.

Loop diuretics such as frusemide are commonly used to treat fluid retention and congestion, but have not been proven to improve survival in heart failure. Loop diuretics may cause hypotension, renal impairment and electrolyte disturbances. These effects may be amplified in conjunction with ACE inhibitors/ARBs, and careful monitoring of clinical response, renal function and electrolytes is recommended. Aldosterone antagonists such as spironolactone and eplerenone are recommended for those with systolic heart failure not adequately controlled with optimal doses of an ACE inhibitor/ARB, beta blocker and loop diuretic. These medications have shown improvement in symptom control, reduced hospitalisations and reduced all-cause mortality. Of particular concern when using aldosterone antagonists in conjunction with ACE inhibitors/ARBs, is the risk of hyperkalaemia. The elderly and those with renal impairment may be at a greater risk of developing life-threatening hyperkalaemia and close monitoring may be required.

Digoxin, once widely used for heart failure, has fallen out of favour in recent times due to its potential for toxicity and studies linking its use with higher all-cause mortality. Patients with Atrial Fibrillation (AF) who have poor rate control, and those in sinus rhythm who have not adequately responded to optimal doses of diuretics, ACE inhibitors/ARBs, beta-blockers and aldosterone antagonists may nevertheless benefit from digoxin treatment.

Quick Tip

Medicines that can exacerbate heart failure

Heart failure is associated with fluid retention, typically in the lungs, lower legs and abdomen - any medications that cause fluid retention, inhibit kidney function, increase blood pressure or reduce cardiac output can exacerbate CCF. Some of the most common types of medications that cause fluid retention are anti-inflammatory medications – both steroidal and non-steroidal. Examples include oral corticosteroids including dexamethasone, prednisolone and fludrocortisone, as well as Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) including diclofenac, ibuprofen, indomethacin, ketoprofen, ketorolac, naproxen, piroxicam, celecoxib, etoricoxib, and meloxicam.

Antidiabetic medications sometimes referred to as “glitazones” (rosiglitazone and pioglitazone) may also cause fluid retention and, unsurprisingly, can exacerbate heart failure. These medications are therefore contraindicated in those with a significant level of CCF.

Medications that reduce heart rate and cardiac output (negative inotropes) may also worsen heart failure amongst susceptible people – these agents include some calcium channel blockers (diltiazem and verapamil) and beta-blockers (NB: beta-blockers are also used to treat CCF despite the possibility of initially aggravating CCF).

*James Shankie-Williams, Clinical Pharmacist,
Ward MM*

Latest News

As many of you will have seen in our announcement earlier this month, Ward MM are working with the very brightest of sparks at the world's largest medical centre, the Texas Medical Centre, in the USA. Our mission in Texas is to continue to build on our existing technology and systems to create even better solutions to eliminate medication related harm, not just in Australia, but internationally. The team in the USA are already gaining international media coverage. We will continue to keep you posted as the programme progresses.



On the home front, our very own Dr Natalie Soulsby has been honoured as the SA/NT Pharmacist of the year! Nat is a powerhouse of Ward MM, serving as our National Operations Manager and being intimately involved in virtually all aspects of Ward operations. Her leadership has enhanced and protected the health and quality of life of thousands of older people at risk of medication-related problems. Her involvement in education and peer support for early career pharmacists has significantly influenced the careers of many.



Notes from facilities serviced by Ward MM

It is quite common for us to receive similar enquiries from more than one facility in our network. In this section we summarise questions with a common basis – as a part of our “connect – network – share” ethos, we share the information with all of our facilities.

Q. “ACE Inhibitors are very commonly prescribed – what are the important side effects of these drugs?”

A. ACE Inhibitors (ACEIs) and Angiotensin Receptor blockers (ARBs) are the most widely prescribed antihypertensive medications in Australia. Out of the top ten most dispensed medications in Australia in 2015, five of these are either ACEIs or ARBs.

Given the widespread use of these medicines, it is not surprising that the drugs have a relatively low incidence of adverse effects, and the most common adverse effects are mild and often transient. Some have suggested that candesartan (Atacand) (a popular ARB) has no side effects, as the incidence of adverse effects with this medication was comparable to placebo in pre-market clinical trials. Unfortunately, there is no such thing as a medication without side effects, but it is fair to say that candesartan, like other ARBs, is well tolerated.

The most common adverse effects of ACEIs and ARBs include mild, non-specific ailments, such as headache, fatigue (ACEIs) and nausea (ACEIs) that can be experienced when taking almost any medications (even placebos!). Other adverse effects, such as hyperkalaemia (high serum potassium), hypotension (low blood pressure), dizziness and kidney impairment, are related to the mechanism of action of these medications. Interestingly, a persistent dry cough is a common adverse effect of ACEIs, but is not seen as frequently with ARBs. This adverse effect is not dose-dependent, can occur anytime within the first few months of treatment, and does not usually respond to treatment.

One of the more serious characteristic adverse effects of these medications is angioedema – a rapid swelling of the skin, subcutaneous and surrounding tissue, typically affecting the face, lips, tongue, upper airway and sometimes the gastro-intestinal tract. This can happen anytime during treatment and is more common with ACEIs than ARBs. Despite being more common in those taking ACEIs, the incidence is only estimated at around 1 in 250 to 1 in 1000.

James Shankie-Williams, Clinical Pharmacist, Ward MM



Meet your Ward MM Team Member

Na Lim has been a part of Ward MM family for the last 6 years. It has been a rewarding and humbling journey of learnings from and with the team.

Most meaningful moments... There are many, but if I must pin it down to 1 or 2, then they will have to be the births of my 2 boys!

My biggest challenge... Mastering the art of parenting. I've been blessed with various wonderful roles in life, but nothing brings me more joy than being a mum to my boys!

I'd be lost without... My family. They are my biggest fans and I'm theirs!