



## From the Clinical Director

Many residents in the residential aged care setting will have a documented diagnosis of angina, and will experience intermittent symptoms that will require prompt management to relieve distress and to prevent damage to the myocardium. The term “angina pectoris” is derived from the Latin term *angere pectus* which means ‘squeezing of the chest’. The primary cause of angina is coronary heart disease, an issue that effects over a million Australians, and despite extensive research remains the leading cause of death in this country. Coronary heart disease is caused by a build-up of fatty material in the coronary arteries which results in the formation of a plaque. This process is known as atherosclerosis and leads to a progressive narrowing of the arteries.

Angina occurs when oxygen demands of the heart muscle exceed that which can be delivered by the narrowed arteries. Symptoms of angina may vary from mild to severe, and often include a feeling of chest tightness and pain which may radiate to the jaw, shoulders, back, arms and even hands. Some people with angina may not experience any pain and instead report more subtle symptoms such as an unpleasant feeling in the chest, light-headedness or shortness of breath. There is some evidence to suggest that men and women may express the symptoms of angina differently – women tend to be less likely to experience severe central chest pain and more likely to have breathlessness, nausea or abdominal pain – it is thought that this might be related to the finding that women more frequently develop heart disease within the very small arteries that branch out from the coronary arteries. This is referred to as microvascular disease. Up to 50 percent of women with angina symptoms who later undergo cardiac catheterization don't have the obstructive type of coronary artery disease.

Angina can be classified as either stable or unstable. Stable angina is a chronic condition and refers to symptoms that are usually associated with physical exertion or extreme emotion. Symptoms are often predictable, last less than 10 minutes and typically resolve with rest or use of medications. Angina is categorised as stable if the pattern of symptoms has not changed during the past month. Unstable angina can be difficult to differentiate from a myocardial infarction, and is therefore grouped under a broader term known as acute coronary syndromes (ACS). Unstable angina often occurs as a result of plaque disruption and symptoms may commence with little or no notice and while a person is at rest. Symptoms typically last greater than 10 minutes and may be new onset or associated with a worsening of symptoms in someone with previously stable angina. Compared to stable angina, unstable angina has a higher risk of mortality and requires prompt medical treatment. If left untreated, up to 10% of unstable angina cases will progress to myocardial infarction.

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Diagnosis and investigation of angina will usually involve referral to a cardiologist for physical examination and detailed assessment of clinical history. Diagnostic tests may include exercise stress testing using an ECG, stress echocardiography and coronary angiography.

There are various modifiable and non-modifiable risk factors for developing angina. Non-modifiable risk factors include advancing age, gender, ethnicity and family history. Modifiable risk factors that should be addressed and treated include hypertension, anaemia, aortic stenosis, cardiomyopathy, thyroid dysfunction, dyslipidaemia, diabetes, depression, anxiety, obesity, cigarette smoking, lack of physical activity and poor diet.

Ischaemic heart disease and angina are conditions that rarely exist in isolation. In many cases an elderly person affected by ischemic heart disease will have sustained some degree of damage to the heart muscle, which may in turn contribute to the development of congestive heart failure. Almost invariably, these people will be treated with a range of medications which may have complex potential for adverse effects and drug interactions. Because the pathology associated with ischemic heart disease may not be amenable to simple interventions, many of those affected can expect to be taking these medicines for the rest of their lives. Bearing this in mind, a medication review can provide significant benefits – your Ward MM pharmacist can arrange this if need be.

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



## Feature Article:

# Management of cardiac ischaemia

Given that many residents in aged and extended care facilities will be diagnosed with Ischaemic Heart Disease (IHD) and will be affected by episodes of angina, it is very important for staff to have a good understanding of the practical day to day management of these issues. A previously described, angina the pharmacological management aims for stable angina are to treat and prevent symptoms and reduce the risk of complications such as myocardial infarction and death. Treatment of acute angina is usually achieved with glyceryl trinitrate sublingual spray or tablets. The use of sublingual spray has largely superseded the use of tablets due to its convenience and longer shelf life. As the onset of angina symptoms may be unpredictable, it is important that the GTN product should be readily available at all times – an important factor to consider is to ensure that the resident takes a GTN spray or tablets with them on outings such as home visits or social events. The management of unstable angina is a medical emergency and is beyond the scope of this article – it is important however that staff carefully monitor the profile of angina symptoms to ensure that a pattern is not present, and that symptoms resolve after rest and treatment (if not, the risk of myocardial damage or an MI needs to be considered). When angina does not resolve within the usual expected timeframe, it will be important to seek urgent attention – unless medical staff are on site, this would usually involve calling an ambulance.

Preventative therapy for angina typically involves the use of beta blocker medications such as metoprolol or atenolol. These agents reduce myocardial oxygen demand, improve exercise capacity and reduce the risk of complications. When prescribing beta blockers it is important to keep in mind that some adverse effects associated with these drugs may not be immediately apparent – for example, some people may develop wheeze or bronchospasm – this is more common amongst those with a pre-existing history of asthma. If beta blockers are not tolerated or are contraindicated, a non-dihydropyridine calcium channel blocker such as verapamil or diltiazem may be useful. Routine combination treatment with both verapamil/diltiazem + a beta blocker is not recommended, but is sometimes undertaken with specialist supervision (there is a risk of heart block/bradycardia). Calcium channel blockers are also a serious cause of constipation amongst elderly people in aged care. The addition of a dihydropyridine calcium channel blocker such as amlodipine can be used when symptoms are not adequately controlled with a beta blocker alone. Another useful but less frequently used approach includes the use of long acting nitrate medications such as isosorbide mononitrate (Imdur) or GTN in a transdermal patch (Transiderm Nitro). Ivabradine, nicorandil and perhexiline are also used, although in particular in the case of perhexiline careful monitoring is needed to avoid serious adverse effects such as elevation of LFTs or neuropathy.

In some cases, surgical intervention for angina may be required and involves either coronary angioplasty or coronary artery bypass surgery. To be considered as a prospect for surgical intervention, a patient needs to be medically fit enough to be able to tolerate anaesthesia and the procedure – in some cases this means that although surgery might be useful it is not practical, and medication therapy must suffice.

*Duncan Yorkston, Clinical Pharmacist, Ward MM*

## Quick Tip

### Proper Storage of Nitrate Medications

Nitrates medications are primarily used to treat angina pectoris, which results from reduced blood flow to the myocardium. Glyceryl trinitrate (GTN) was the first of these to be used for angina in the late 19th century, however, the chemical itself was already widely known by another name - nitroglycerin. To avoid causing alarm, its name was changed to GTN. Nitroglycerin/GTN is an unstable explosive oily liquid, which poses challenges to creating a stable formulation (NB: GTN medications pose no threat as an explosive unless incinerated after disposal!).

GTN sublingual tablets are sensitive to heat, light and moisture. They should be stored in a cool, dry place in an opaque bottle (original packaging). Poor choices for places to store GTN tablets include: on the person (close to the body); in a hot room; in direct sunlight; or in the bathroom. Manufacturers recommend discarding any remaining tablets three months after opening the bottle due to loss of efficacy. Since GTN tablets come in bottles of 100, this usually results in many tablets being wasted. A GTN sublingual spray (Nitrolingual Pumpspray) is an alternative that tends to create less waste since these sprays can be kept until their expiry regardless of when they are opened (so long as they are stored appropriately – cool, dry room away from direct sunlight).

GTN is quite a short acting medication, with a half-life of around 5 minutes. Therefore, in people who require regular treatment for angina, an alternative method of treatment is required. There are two main options – a longer-acting nitrate tablets (isosorbide mononitrate or isosorbide dinitrate) or a GTN patch (Transiderm Nitro or Nitro-Dur), which slowly releases GTN throughout the day. These tablets and patches do not require specific storage conditions, although the patches should be kept in their original foil packaging until they are used. The manufacturer does not recommend keeping the patches refrigerated.

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

## Latest News

### In case you missed it...

Earlier this month we sent out a Ward Alert in regards to the recall of four batches of EpiPen 300 microgram adrenaline injection syringe auto-injectors.

EpiPens from affected batches can be returned to pharmacies for a refund or exchanged for one from a different, unaffected batch free of charge.

The four affected batches may contain a defective part that could result in the auto-injector failing to activate or the need to apply more force than normal to activate.

The affected batch numbers are:

Batch number Expiry

5FA665	April 2017
5FA6651	April 2017
5FA6652	April 2017
5FA6653	April 2017

No other batches of EpiPen, including EpiPen Jr 150 microgram adrenaline injection syringe auto-injectors, are known to be affected by this issue and are not subject to this recall.

### Ward MM Masterclass – SAVE THE DATE

We've received a number of enquiries in regards to the next instalment of the Ward Medication Management Aged Care Masterclass. Rest assured, your invitation is not far away. Keep May free as an incredible line up of speakers focused on heart health in aged care are currently being secured to deliver you another valuable day of learning, networking and collaboration. Stay tuned!

# 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. “We often hear about cardiac stents– what is involved?”**

A. In the previous article we briefly discussed some of the surgical interventions that may be used to treat those suffering from angina and coronary heart disease. Angioplasty is a procedure whereby a small balloon is inserted into the narrowed section of coronary artery. The balloon is then inflated which helps to widen the artery and restore adequate blood

flow to the heart. A stent is often inserted into the coronary artery as part of this procedure and is used to help prevent the artery from becoming narrow again.

There are two types of stents: bare metal stents and drug-eluting stents (DES). DES contain a slow-release, polymer coating which releases an anti-proliferative drug to prevent tissue from growing over the stent. Bare metal stents contain no drugs and therefore tissue may easily grow over the stent and narrow the artery (a process known as restenosis). It is for this reason that drug-eluting stents are more commonly used.

When inserted, there is a risk that blood clots may form on the exposed surface of the stent. Dual anti-platelet therapy (DAPT) with clopidogrel and aspirin is routinely prescribed to reduce the risk of stroke or myocardial infarction following the insertion of a stent. The duration for DAPT following stent insertion is controversial. For stable patients treated with either type of stent who are not at high bleeding risk and who do not have planned non-cardiac surgery within one year, evidence supports the use of DAPT for at least 6 to 12 months. Beyond 12 months, the decision to continue DAPT will depend on individual patient characteristics, taking into account relative risks vs benefits of continued therapy. It is recommended that all patients remain on low dose aspirin indefinitely following insertion of a stent.

*Duncan Yorkston, Clinical Pharmacist, Ward MM*



## Meet your Ward MM Team Member

**Lee Lin Loh** joined WardMM in 2015 after spending many years working in retail pharmacy.

**Most meaningful moments...** was making the decision to transition from retail pharmacy. It has been a steep learning curve for me having had minimal experience in the aged care sector. The working relationship I've had with the great WardMM family and amazing facility staff has been a very welcome change and a rewarding experience in itself.

**My biggest challenge...** is a toss up between working out how to use Windows again (don't think I've quite worked it out yet) and finding my way around the different facilities, especially when all the corridors look the same to me on the first few visits (this at least has had some improvement).

**I'd be lost without...** my phone... from the reminders on my calendar, my to do list and Google maps!