Ward MEDICATION MANAGEMENT

E- News

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From the Clinical Director

An acute myocardial infarction (AMI) or heart attack occurs when blood flow to the heart becomes partially or fully occluded, resulting in irreversible necrosis of myocardial tissue. Much like angina which was discussed in last month's newsletter, coronary heart disease is also the primary cause of myocardial infarctions. In Australia, coronary heart disease is responsible for around 20% of all deaths. Of those people who suffer from an AMI, approximately 25% will die from the initial event with a further 10% dying within 2 years. Younger men are significantly more likely to suffer from a heart attack when compared to women however the rates of AMI are similar amongst men and women >70 years of age. Risk factors for an MI include:

- Coronary heart disease
- Hyperlipidaemia
- Diabetes
- Hypertension
- Smoking
- Family history of heart disease
- Increasing age
- Sedentary lifestyle
- Poor diet and excessive alcohol intake
- Obesity
- Depression/anxiety

It's important to recognise that the symptoms of myocardial infarction may differ significantly from person to person. The hallmark symptom is chest pain or discomfort which is often described as a feeling an intense pressure, tightness or heaviness. Symptoms may also radiate to the jaw, neck, shoulders, arms or back. Other less common or atypical symptoms may include shortness of breath, fatigue, nausea, heartburn, dizziness and cold sweats. Patients may report symptoms hours, days or even weeks preceding an AMI.

Anyone experiencing symptoms suggestive of a heart attack should receive prompt medical assessment and treatment. Diagnostic tests may include ECG, blood tests including troponin levels, and coronary angiography. Patients experiencing acute myocardial ischaemia are divided into two categories: ST elevation myocardial infarction (STEMI) and non-ST elevation acute coronary syndromes (NSTEACS).

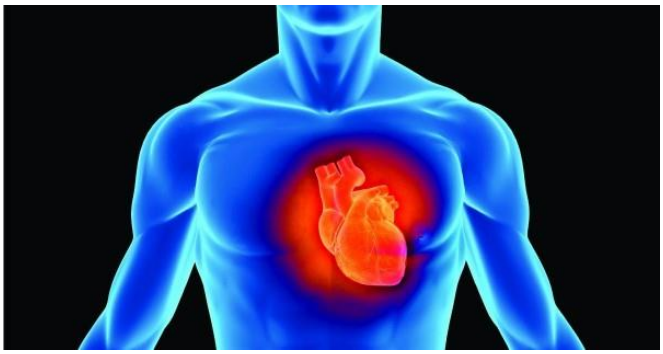
For any resident suffering from acute chest pain where myocardial ischaemia is suspected or cannot be excluded, aspirin 300 mg orally is generally administered as an urgent intervention unless this is contraindicated. The administration of oxygen, sublingual GTN and IV morphine may also be used where necessary, usually in the ambulance and route to the hospital. For those patients diagnosed with STEMI, the treatment aims include re-perfusion the ischaemic myocardium, in this way minimising the infarct size, relieving symptoms and preventing later complications. Ideally, re-perfusion of the myocardium that is affected by the occluded coronary artery will be achieved with percutaneous coronary intervention (PCI) involving balloon angioplasty and the placement of a stent. Alternatively, where PCI is delayed or unavailable, re-perfusion may be achieved with fibrinolytic drugs which are designed to dissolve the arterial clot. To reduce the risk secondary cardiovascular events after the MI, most patients will benefit from further follow-up long-term combination drug therapy that will usually involve the use of anti-platelet drugs, beta blockers, ACE inhibitors and statins.

After an AMI, approximately 25% will die from the initial event & further 10% within 2 years.

Those patients classified into the NSTEACS category (which includes NSTEMI and unstable angina) will be further divided into low, intermediate or high risk depending on the nature of their chest pain, and the presence of ECG changes or elevated serum troponin levels. For patients at high risk, combination therapy using anti-platelet drugs, anticoagulants and beta blockers is usually recommended unless contraindicated. All high-risk patients should also be considered for revascularisation surgery, but it is also important to consider the inherent risks associated with general anaesthesia for elderly people. For patients in the low-intermediate risk category, anti-platelet therapy is recommended with additional interventions, dependent on further monitoring and assessment i.e. coronary angiography.

There can be no doubt that any MI is a life-changing event and will have far-reaching consequences in relation to general management of the resident, as well as considerable ramifications with respect to drug therapy. It is generally the case that a range of new medications are introduced after an MI, each with their own risk of adverse effects and drug interactions. In the period following the resident's return to the facility after a hospital stay medication complexity is often increased, meaning that this is a good opportunity to arrange a medication review to optimise treatment.

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



Feature Article:

Myocardial Infarction – what is next?

There is a very high prevalence of Ischaemic Heart Disease (IHD) in aged and extended care facilities around Australia, and in view of this it is relatively common for these people to have a Myocardial Infarction (MI) despite the efforts that are invested to minimise the likelihood of this outcome. Given that the likelihood of survival after an MI is much better if there is early intervention, and that serious ongoing disability and complications are also less likely with early attention, it is critical that staff in residential aged care must be alert to the signs and symptoms of an MI (outlined elsewhere in this Newsletter). The steps taken early in the course of management of an acute MI are generally targeted at reducing the amount of myocardium (cardiac muscle) that is irreversibly damaged, but equally to prevent serious complications such as dangerous arrhythmias that commonly occur in the 24-48 hours after the evolution of the MI. Much of this work commences with emergency personnel (in the ambulance), and then continues in the cardiac care/intensive care of a hospital – thus it is critical the resident with a likely MI makes their way to the closest available hospital in the quickest possible timeframe. Once hospitalised, the patient will undergo various investigations that will provide more insight into the nature and extent of damage – these will include serial electrocardiograms a measurement of the serum concentration of troponin, an indicator of cardiac muscle damage. Subsequently a coronary angiogram can assist with assessment of the extent and distribution of cardiac damage, and the potential for revascularisation procedures such as stenting.

After the diagnosis of an MI and the period of care in hospital during which recovery takes place, it is often the case that many additions or alterations to drug treatment are implemented. Perhaps the most common addition to the treatment regimen is an antiplatelet drug most commonly in the form of aspirin at a dose of 100 – 300 mg daily. An alternative is to use clopidogrel (Plavix/Iscover). There are some patients who may be relatively resistant to the antiplatelet effects of clopidogrel because of their genetic makeup, and there is also evidence to suggest that coadministration of some PPI medications for reflux (e.g. esomeprazole or omeprazole) can also reduce the efficacy of clopidogrel. If a patient has required the placement of a drug-eluting stent to open a coronary artery, then it is usual for dual antiplatelet treatment (in the form of combined aspirin with clopidogrel) to be used for a period of 6-12 months – fixed dose combination products containing both drugs are readily available.

To reduce the chances of having subsequent additional MI, it is recommended that that a beta-blocker, such as atenolol, metoprolol or bisoprolol should be introduced. Evidence suggests particular benefit from these drugs if taken for the first 12 months after the MI, but they may be continued for longer than this for people who also have heart failure or hypertension. Similarly, large clinical trials have proven the clinical effectiveness of the ACE inhibitors after myocardial infarction (MI). The survival benefits appear to be a class effect and are largest when the agents are used long term in patients with symptomatic heart failure (HF) or asymptomatic left ventricular dysfunction (LVD).

For people not already taking a medication to lower the serum cholesterol, if there is a finding of dyslipidaemia a statin drug such as simvastatin, atorvastatin or rosuvastatin will be commenced. A new injectable cholesterol lowering agent – evolocumab (Repatha) has also recently become available in Australia.

After an MI a person may be referred to a cardiac rehabilitation programme. Cardiac rehabilitation can help recovery. These programmes usually involve healthy lifestyle advice, education, coaching and support. Cardiac rehabilitation programmes typically run for 6 - 10 weeks. They often start in hospital and continue after that in an outpatient setting.

Duncan Yorkston, Clinical Pharmacist, Ward MM

Quick Tip

Aspirin and MIs

Myocardial infarction (MI) is commonly listed in the medical history of residents. Acute MI occurs when the coronary artery (blood vessel supplying blood to the heart) is blocked by a thrombus (blood clot).

As the heart muscle is damaged by decreasing oxygen supply due to the obstructed artery, treatment goal(s) would be to restore flow and decrease oxygen consumption in the heart muscle. All patients with a suspected MI should be given aspirin unless there is a definitive contraindication. Aspirin is a powerful antiplatelet drug with a rapid effect, thought to reduce MI-related mortality by 20%. It can help to break up blood clots and improve blood flow through narrowed arteries. A regular daily dose of aspirin can also help prevent new clots from forming and existing clots from growing. A stat dose of aspirin, 150-300 mg should be swallowed as early as possible at the earliest signs/symptoms of a heart attack while waiting for the specific care to be administered. Aspirin, a relatively affordable, safe and easily accessible option is an excellent opportunity to improve the delivery of care in managing heart attack in our elderly residents. With a heart attack, every minute counts. Getting to hospital can reduce the damage to the heart muscle and increase the chance of survival.

Wei Jin Wong, Clinical Pharmacist, Ward MM

Latest News

Save the Date – Ward MM Masterclass

It's official – Ward MM's next free Aged Care Medication Masterclass will take place on the 29th May 2017. This time we're looking at Heart Health in the elderly and have a range of speakers ready to challenge your thinking, discuss your ideas and collaborate on ways to tackle this hot topic. In a change from previous events, following popular demand from the South Australian contingent, this Masterclass is going to take place in Adelaide. The event is however open to national attendees and we will be happy to provide advice on accommodation options as required. Invitations to follow shortly.

NPS Medicinewise and Ward MM

This month Ward MM will be presenting as part of the Choosing Wisely Australia National Meeting on the 4th May 2017. Ward MM will be sharing some key data findings on the use of medications in the elderly. Ward MM are both honoured and excited to have been asked to speak at this event. Ward MM's findings will be shared with our partners over the coming weeks.

Your Questions Answered

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. "What is QT prolongation and why is it important?"

A. The QT interval is a measurement taken in an ECG that represents the time for the ventricular heart muscle to depolarise and then repolarise for each beat. Normally this is a relatively constant time for any individual, usually just over 0.4 of a second. When prolonged, even to 0.5 of a second, it predisposes to a very serious cardiac arrhythmia called torsades des pointes.

QT can be prolonged by factors including genetic abnormalities, electrolyte disturbances (potassium, magnesium, calcium), increasing age, female gender, testosterone suppression, bradycardia, damage to the heart (including heart failure, coronary heart disease) and medications. All of this means that elderly residents in aged care are particularly vulnerable to this concern.

Many drugs can prolong QT interval by various mechanisms, either directly, by increasing the levels or effects of other medicines known to prolong QT interval, or by causing electrolyte imbalances.

Medications associated with QT prolongation will not always cause torsades de pointes, and any effect is also dose-dependent; so while not necessarily contraindicated in those at risk, extra caution is required if a combination of triggers exists for an individual, particularly those with slow heart rates, pre-existing arrhythmias or already taking a medication that prolongs the QT interval.

A useful database of medicines suspected or known to prolong QT is published at Credible Meds (crediblemeds.org). Perhaps ironically, anti-arrhythmic agents often carry a relatively high risk of QT prolongation, particularly amiodarone and sotalol out of the common ones seen in aged care.

Other medications associated with QT prolongation include:

- Antibiotics (macrolides, quinolones)
- Ondansetron, Domperidone
- Citalopram/Escitalopram (known risk) and some other antidepressants (possible risk)
- Antipsychotics (haloperidol is a known risk, many newer agents are possible risk)
- Anticancer medications
- Donepezil (known risk)

Sometimes a drug may be taken off the market when data emerges that is causes an unacceptable risk of TdP - Cisapride was a useful antiemetic that was discontinued for this reason, while Terfenadine was an OTC antihistamine that suffered a similar fate.

Andrew Wood, Clinical Pharmacist, Ward MM

Meet your Ward MM Team Member

Wei Jin Wong joined Ward in November 2016 after spending some time within SA Health, the local public health system for South Australia. What attracted him to Ward MM was the innovative approach of the company. He feels excited about the possibilities that could come, particularly using technology to further improve how we care for others.

Most meaningful moments… Occurred during a medical trip to Nepal with other healthcare volunteers. At a village that I visited, the locals sacrificed their only goat so that we could have some meat after only serving us beans and vegetables as that was what they could only afford. That was true generosity! The team pooled some money together and bought a pair of goats back for them (Male + female of course!) That at least they would have some opportunities for more goats.

My biggest challenge… Is having to be organized, especially in this line of work of visiting various facilities. I am not known to be the most organized person around.

I'd be lost without… My trusty little notebook with all my various reminders. In this age of technology, there is still something fulfilling about being able to physically tick off tasks from my weekly 'list-to-do'.