



Cardiac thrombolysis Pack

ST segment elevation Acute Myocardial Infarction is a life threatening condition that requires time critical treatment with cardiac reperfusion. In metropolitan regions, this is usually provided with acute angioplasty, however, in non-metropolitan areas where the time to a cardiac catheter lab is greater than 90 minutes, thrombolysis with Tenecteplase is the main treatment.

All Emergency Department and Emergency Services should keep a cardiac thrombolysis pack in their Department to ensure quick and timely reperfusion for patients who require it.

The pack should contain the following:

Medications

- 1 x Tenecteplase 50mg box
- 6 x Heparin 5000 units in 1mL ampoule
- 600mg Clopidogrel tablets (administer half only - 300mg)
- 300mg Aspirin
- 1 x 500mL Sodium Chloride (0.9%) bag
- 1 x IV giving set
- A note directing the staff to the fridge for enoxaparin

Forms / Paperwork

- 1 X Adult Observation and Response Chart MR140a
- 1 x Tenecteplase contraindications checklist MR172A
- 1 x Tenecteplase administration checklist MR172B
- 1 x “High risk ACS/post cardiac thrombolysis” anti-coagulation guidelines
- 1 x Anti-coagulation medication chart MR170C
- 1 x Patient information sheet

<p>_____ Hospital / Health Service</p> <h2 style="text-align: center;">Tenecteplase Contraindication Checklist</h2> <p>Ward: _____</p> <p>Doctor: _____</p>	Surname		UMRN / MRN	
	Given Name		DOB	Gender
	Address			Post Code
				Telephone

ABSOLUTE CONTRAINDICATIONS TO TENECTEPLASE		YES	NO
1.	Patient has known allergy / hypersensitivity / adverse reaction to Thrombolytic agents or Gentamicin	<input type="checkbox"/>	<input type="checkbox"/>
Risk of Bleeding			
2.	• Active or recent internal bleeding <14 days (excluding menstruation)	<input type="checkbox"/>	<input type="checkbox"/>
	• Significant closed head trauma, facial trauma or other severe trauma within past 3 months	<input type="checkbox"/>	<input type="checkbox"/>
	• Suspected aortic dissection or pericarditis	<input type="checkbox"/>	<input type="checkbox"/>
Risk of Intracranial Haemorrhage			
3.	• Recent (within 2 months) intracranial or intraspinal surgery	<input type="checkbox"/>	<input type="checkbox"/>
	• Any prior intracranial haemorrhage	<input type="checkbox"/>	<input type="checkbox"/>
	• Ischemic stroke within the past 2 to 6 months or previous haemorrhagic stroke	<input type="checkbox"/>	<input type="checkbox"/>
	• Known structural cerebral vascular lesion (i.e. Arteriovenous malformation, aneurysm)	<input type="checkbox"/>	<input type="checkbox"/>
	• Known malignant intracranial or intraspinal neoplasm (primary or metastatic)	<input type="checkbox"/>	<input type="checkbox"/>
	• Known severe bleeding disorder	<input type="checkbox"/>	<input type="checkbox"/>
RELATIVE CONTRAINDICATIONS TO TENECTEPLASE		YES	NO
Risk of Bleeding			
4.	• Patient on Warfarin - only thrombolysed if INR < 2.0	<input type="checkbox"/>	<input type="checkbox"/>
	• Non-compressible vascular punctures < 10 days i.e recent CVAD	<input type="checkbox"/>	<input type="checkbox"/>
	• Recent major surgery (< 3 weeks)	<input type="checkbox"/>	<input type="checkbox"/>
	• Traumatic or prolonged CPR (>10 minutes)	<input type="checkbox"/>	<input type="checkbox"/>
	• Recent internal bleeding (2 to 4 weeks prior)	<input type="checkbox"/>	<input type="checkbox"/>
Risk of Intracranial Haemorrhage			
5.	• History of chronic, severe, poorly controlled hypertension	<input type="checkbox"/>	<input type="checkbox"/>
	• Severe uncontrolled hypertension on presentation (systolic >180 mmHg or diastolic >130 mmHg)	<input type="checkbox"/>	<input type="checkbox"/>
	• Ischemic stroke > 3 months ago	<input type="checkbox"/>	<input type="checkbox"/>
	• Dementia or known intracranial pathology	<input type="checkbox"/>	<input type="checkbox"/>
Other			
6.	• Pregnancy	<input type="checkbox"/>	<input type="checkbox"/>
	• Previous TIA	<input type="checkbox"/>	<input type="checkbox"/>
	• Haemorrhagic ophthalmic conditions	<input type="checkbox"/>	<input type="checkbox"/>
	• History of headaches	<input type="checkbox"/>	<input type="checkbox"/>
	• Previous Streptokinase / Alteplase / Reteplase treatment (>5 days prior) or allergy to these agents	<input type="checkbox"/>	<input type="checkbox"/>
	• Active peptic ulcer, or other ulcerative conditions (i.e. Crohn's Disease)	<input type="checkbox"/>	<input type="checkbox"/>
	• Age >75 years	<input type="checkbox"/>	<input type="checkbox"/>
	• Advanced kidney or liver disease	<input type="checkbox"/>	<input type="checkbox"/>
7.	IF NO TO ALL QUESTIONS, PROCEED TO MR172B TENECTEPLASE ADMINISTRATION CHECKLIST		

DATE: _____

TIME: _____

NAME: _____

SIGNATURE: _____

DESIGNATION: _____

_____ Hospital / Health Service Tenecteplase Administration Checklist Ward: _____ Doctor: _____	Surname		UMRN / MRN	
	Given Name		DOB	Gender
	Address			Post Code
				Telephone

The prescribing medical officer (MO) will remain contactable by phone during the administration of Tenecteplase and in the post administration phase.

If the administering registered Nurse (RN) is not able to interpret cardiac rhythms/12 lead ECG, discuss with MO the risk/benefit of administering thrombolysis. All changes to be immediately sent to MO for review within 10 minutes

PRE-ADMINISTRATION				Yes		
1.	Move patient to resuscitation area. The RN caring for patient must have Basic Life Support and AED Defibrillation Competency. Where possible also an Advanced Life Support Competency.			<input type="checkbox"/>		
2.	Ensure STEMI diagnosis has been made by MO and documented on the 12 lead ECG and labelled "Pre-Tenecteplase"			<input type="checkbox"/>		
3.	Complete Tenecteplase Contraindications Checklist (MR172A). If any contraindications, RN URGENTLY discuss with appropriate MO (or FACEM/ ETS or cardiologist)			<input type="checkbox"/>		
4.	Confirm patient states symptoms of chest pain started less than 12 hours ago. If onset >12 hours ago, MO to URGENTLY discuss with cardiologist regarding further management			<input type="checkbox"/>		
5.	Perform baseline urinalysis for haematuria if patient able to void			<input type="checkbox"/>		
6.	Establish IV access x 2 (dedicated line for Tenecteplase)			<input type="checkbox"/>		
7.	Collect bloods. FBC, U&E, BGL, APTT, INR are recommended (if testing is available)			<input type="checkbox"/>		
8.	Undertake a baseline head to toe assessment. Apply pressure dressings to all existing puncture sites and superficial wounds			<input type="checkbox"/>		
9.	Lie patient 0-30 degrees (semi-fowler) if possible			<input type="checkbox"/>		
10.	Consider ongoing pain relief/ antiemetic –discuss with MO for prescription, check medications as per WACHS Medication Policy and document appropriately			<input type="checkbox"/>		
11.	Ensure patient has been administered Aspirin 300mg PO(unless contraindicated) and documented on NIMC			<input type="checkbox"/>		
12.	Ensure the following drugs used for treatment of advanced life support or reperfusion arrhythmias are readily available. ONLY to be given as per Medical Officer order or as part of ALS algorithm. <ul style="list-style-type: none"> Adrenaline 1mg IV as per Advanced Life Support ARC guidelines cardiac arrest protocol Atropine IV 300-600 micrograms for symptomatic bradycardia Amiodarone 300mg IV for ventricular tachyarrhythmias 			<input type="checkbox"/>		
13.	Prepare anticoagulant therapy as per MO order (verbal or faxed) as per the WA Anticoagulation Medication Chart (MR170c), the "High risk ACS/post cardiac thrombolysis anticoagulation guidelines" and 17 and 19 of this Tenecteplase administration check list.			<input type="checkbox"/>		
14.	Prepare Tenecteplase dosage. Protect from light.			<input type="checkbox"/>		
		Weight	Tenecteplase		Tenecteplase	Volume
		< 60kgs	6,000 units		30mg	6mL
		60 – 70kgs	7,000 units		35mg	7mL
		70 – 80kgs	8,000 units		40mg	8mL
		80 – 90kgs	9,000 units		45mg	9mL
	>90kgs	10,000 units	50mg	10mL		
ADMINISTRATION						
15.	Flush IV cannula with 10mLs 0.9% Sodium Chloride			<input type="checkbox"/>		
16.	Administer weight based dose of Tenecteplase as IV bolus over 10 seconds Do not administer into a line containing glucose			<input type="checkbox"/>		

_____ Hospital / Health Service Tenecteplase Administration Checklist Ward: _____ Doctor: _____	Surname		UMRN / MRN	
	Given Name		DOB	Gender
	Address			Post Code
				Telephone

17.	<p>Between 15 minutes before and 30 minutes after Tenecteplase administration, administer enoxaparin OR heparin. If expected time to functioning cardiac catheterisation laboratory is less than 6 hours AND APTT monitoring is available, use heparin.</p> <p>Enoxaparin Dosing (do not administer if using heparin)</p> <ul style="list-style-type: none"> if the patient is <75 years and there is no renal impairment (creatinine clearance is ≥ 30 ml/minute). <ul style="list-style-type: none"> Single IV bolus dose of 30 mg into a separate IV line Plus SUBCUTANEOUSLY 1mg/kg to a maximum of 100mg If the patient is ≥ 75 years, administer 0.75mg/kg (to a maximum of 75mg) subcut stat If the patient has renal impairment (creatinine clearance <30 ml/ minute) administer 1mg/kg (to a maximum of 100mg) subcut stat <p>Heparin Dosing (do not administer if using enoxaparin)</p> <ol style="list-style-type: none"> IV Bolus - 60iu/kg IV Heparin (to a maximum 4000iu) Followed by infusion 25,000 iu in 500ml 0.9% sodium chloride @ 20ml/hr Re-measure APTT within 6 hours of commencing infusion & again within 6 hours of each rate change. 	<input type="checkbox"/>
18.	Administer Clopidogrel 300mg PO as ordered by MO 15- 30 minutes after Tenecteplase administration	<input type="checkbox"/>
19.	Ensure that ongoing anticoagulation (as per "High risk ACS/post cardiac thrombolysis anticoagulation guidelines") is charted on MR170C	<input type="checkbox"/>
POST-ADMINISTRATION		
20.	<p>Monitoring and Observations</p> <ul style="list-style-type: none"> Continuous cardiac monitoring Record observations on Adult Observation and Response Chart (MR140a). Record observations 10 minutely for one hour, then 30 minutely for two hours then every two hours unless patient condition changes. Observations include pain score and AVPU. Report ongoing chest pain post thrombolysis to MO If AVPU deteriorates, commence neurological status on neurological observation form MR147and inform MO promptly Monitor for complications: <ul style="list-style-type: none"> External bleeding Internal bleeding: check for signs of shock e.g. hypotension and/or fast/ slow heart Cardiac rhythm changes, arrhythmias or signs of heart failure (eg new shortness of breath) Nausea and vomiting Signs of stroke, intra cranial haemorrhage – change in AVPU or neuro status 	<input type="checkbox"/>
21.	<p>ECGs</p> <ul style="list-style-type: none"> Perform ECGs 5 minutes, 30 minutes, 60 minutes and 90 minutes post Tenecteplase or if patient reports any new chest pain. Review ECG (in conjunction with MO) for at least 50% reduction in ST segment elevation compare to pre-Tenecteplase ECG. Discuss with cardiologist if 50% reduction hasn't occurred by 30 minute ECG. 	<input type="checkbox"/>
22.	Prepare patient for transfer to tertiary centre	<input type="checkbox"/>
23.	Draw blood for Troponins at 60 minutes post Tenecteplase administration. Repeat at 4 and 8 hours.	<input type="checkbox"/>

DATE: _____

TIME: _____

NAME: _____

SIGNATURE: _____

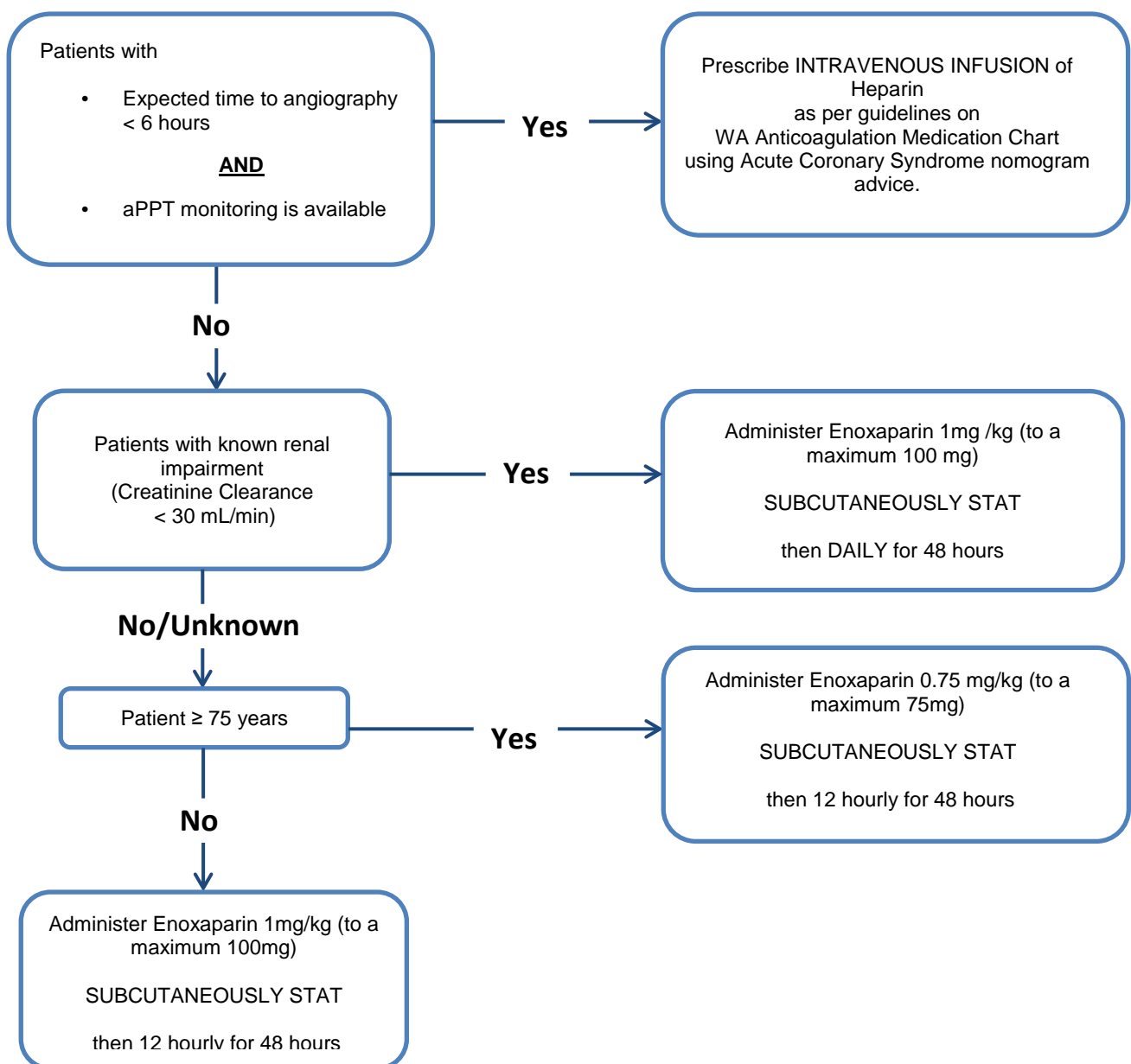
DESIGNATION: _____



High risk ACS/post cardiac thrombolysis anticoagulation guidelines

Anticoagulation guidelines for patients post cardiac thrombolysis OR high risk ACS (TIMI > 3 or a High Risk Feature).

Note – all anticoagulation should be prescribed on a WA Anticoagulation Medication Chart (MR170C)





Patient Information Sheet

Cardiac Thrombolysis – Tenecteplase

We think you are having a heart attack based on your symptoms, answers to questions, clinical examination and the results of the electrocardiograph (ECG) performed when you arrived at the hospital. The ECG has been reviewed by a medical officer and they have prescribed thrombolysis.

Heart attacks are usually due to a blood clot in an artery in the heart which stops the supply of oxygen-rich blood to the heart muscle. The blockage causes pain and will probably result in permanent damage to the heart if not treated straight away.

What is my proposed treatment?

Thrombolysis is a drug administered via intravenous infusion that works to dissolve the blood clot that is blocking the artery. The nurse may provide the drug to you before you see a medical officer, because the benefit is greatest (the extent of possible heart muscle damage is reduced) when treatment is provided as soon as possible after the start of your symptoms.

Are there any risks?

Thrombolysis is generally a safe procedure but there are risks and complications that may arise as with most medical procedures. To reduce the risks the staff will ask you questions regarding any existing health conditions and recent surgery.

Possible risks of this treatment include (figures quoted are for Tenecteplase (Metalyse)*)

- Bleeding complications (overall 26%). Most are minor, excessive bleeding found in 5%
- Intracranial haemorrhage (stroke) 1% (if age >75 years, risk is ~2%)

These are usually resolved by stopping treatment or a blood transfusion. However the risks associated with not treating your blocked artery are felt to be greater than the risks of bleeding elsewhere in your body.

What Happens Now?

After the initial treatment, the medical officer will discuss further treatment options with you and develop a plan most suitable for you. This can include a transfer to another hospital for testing and/or further treatments.

Any concerns regarding treatment should be referred to the medical officer or nurse looking after you.