

STEMI THROMBOLYSIS

Initial assessment

Presentation with cardiac sounding chest pain



Initial investigations

- 12 lead ECG confirming STEMI
- Get IV access
- Transfer to resus



With STEMI diagnosis:

Antiplatelet therapy: Aspirin 600mg

- Further antiplatelet to be advised by Liverpool Heart and Chest hospital
- Decision of thrombolysis requires conversation with Liverpool Heart and chest hospital

Who should be considered for thrombolysis?

Confirmed STEMI:

- Patients with cardiac sounding chest pain +/- arm pain
- ST elevation $\geq 1\text{mm}$ in 2 consecutive leads ($\geq 1.5\text{mm}$ in V2/3 in women, $\geq 2\text{mm}$ in V2/3 in men)
- Deep ST depression in V1-V3 suggesting posterior MI
- New or presumed new LBBB after d/w interventional cardiology registrar

When PPCI is inappropriate

- Those who cannot be transferred for PCI within 120 minutes of STEMI diagnosis due to long ambulance delays
- Patient is clinically too unstable to survive journey to Liverpool heart and chest
- The patient will not be able to tolerate PPCI (e.g. unable to lie flat due to severe heart failure)

Thrombolysis exclusion criteria

Ischaemic symptoms > 12 hours old

Systolic BP >180 and diastolic BP >110, plus any history of chronic severe or poorly controlled hypertension

Previous haemorrhagic stroke

Any known structural cerebral vascular lesion

Cerebral stroke vascular event <6 months year ago

Significant internal (non-compressible) bleeding within the past 6 months

Active peptic ulcer

Major trauma in the last 2 months

Major surgery in the last 3 weeks

Suspected or confirmed aortic dissection

Suspected or confirmed pericarditis, or bacterial endocarditis

Current serious or life-threatening illness

Bleeding diathesis

Pregnancy

Intracranial neoplasm, or other neoplasm with increased bleeding risk

Non-compressible vascular punctures

Prior allergic reaction or anaphylaxis to thrombolysis agent

Any anticoagulant use within 12 hours

Warfarin – check INR and assess risk benefit ratio

No to all the above, continue with thrombolysis

If any of the above are present, discuss with senior medical staff

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What to tell the patient

- Explain they have a blocked coronary artery that is causing them to have a heart attack.
- To limit the damage to the heart we need to give a drug to try and dissolve the clot
- They are not suitable for PCI and require thrombolysis as management
- The drug itself may carry some risks, which are mainly to do with bleeding.
- The risk of a serious complication is less than 1 in 100
- The benefits of treatment outweigh the potential risks
- Check patient understands their diagnosis and treatment plan and consents

Giving thrombolysis

Consideration before administration

- maximum dose is 10000 units (50mg)
- Administer with caution in those >75 years

1. Choose the correct vial size

- <79kgs use 8000 unit pack then administer as below
- >79kgs use 10000 unit pack then administer as below

2. Reconstitute the solution and draw up appropriate volume as per weight

Weight of patient (kg)	Volume of reconstituted solution	Tenecteplase (U)	Tenecteplase (mg)
<60	6	6,000	30
≥60 - <70	7	7,000	35
≥70 - <80	8	8,000	40
≥80 - <90	9	9,000	45
≥90	10	10,000	50

- #### 3. Administer IV bolus, over approximately 10 seconds. It can be administered into pre-existing line, however not one containing glucose as the two are incompatible.

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Antithrombin therapy for thrombolysed STEMI

Consider the patient's age

- If ≤ 75 years of age: bolus dose of heparin given followed by subcutaneous enoxaparin injection
- If > 75 years of age: no bolus given - subcutaneous enoxaparin injection only

Anti thrombin therapy for thrombolysed STEMI's

Weight	≤ 75 yrs – normal R.Function*	≤ 75 yrs – with R.Failure	> 75 yrs - normal R.Function*	> 75 yrs with R.Failure
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	<i>Bolus (heparin)</i>	<i>S/C dose enoxaparin (1mg/kg bd)</i>	<i>Bolus (heparin)</i>	<i>S/C dose enoxaparin (1mg/kg od)</i>	<i>No bolus – S/C dose enoxaparin (0.75mg/kg bd)</i>	<i>No bolus – S/C dose enoxaparin (0.75mgs/kg od)</i>
40kgs	2400 iu	40 mgs bd	2400 iu	40 mgs od	30 mgs bd	30 mgs od
45kgs	2700 iu	45 mgs bd	2700 iu	45 mgs od	34 mgs bd	34 mgs od
50kgs	3000 iu	50 mgs bd	3000 iu	50 mgs od	37.5 mgs bd	37.5 mgs od
55kgs	3300 iu	55 mgs bd	3300 iu	55 mgs od	41 mgs bd	41 mgs od
60kgs	3600 iu	60 mgs bd	3600 iu	60 mgs od	45 mgs bd	45 mgs od
65kgs	4000 iu	65 mgs bd	4000 iu	65 mgs od	49 mgs bd	49 mgs od
70kgs	4000 iu	70 mgs bd	4000 iu	70 mgs od	52.5 mgs bd	52.5 mgs od
75kgs	4000iu	75 mgs bd	4000 iu	75 mgs od	56 mgs bd	56 mgs od
80kgs	4000 iu	80 mgs bd	4000 iu	80 mgs od	60 mgs bd	60 mgs od
85kgs	4000 iu	85 mgs bd	4000 iu	85 mgs od	64 mgs bd	64 mgs od
90kgs	4000 iu	90 mgs bd	4000 iu	90 mgs od	67.5 mgs bd	67.5 mgs od
95kgs	4000 iu	95 mgs bd	4000 iu	95 mgs od	71 mgs bd	71 mgs od
100kgs	4000 iu	100 mgs bd	4000 iu	100 mgs od	75 mgs bd	75 mgs od
105kgs	4000 iu	105 mgs bd	7000 iu	105 mgs od	75 mgs bd	79 mgs od
110kgs	4000 iu	100 mgs bd	4000 iu	110 mgs od	75 mgs bd	82.5 mgs od
115kgs	4000 iu	115 mgs bd	4000 iu	115 mgs od	75 mgs bd	86 mgs od
120kgs	4000 iu	100 mgs bd	4000 iu	120 mgs od	75 mgs bd	90 mgs od

* Normal renal function – creatinine levels ≤ 221 for men, ≤ 177 for women