

Intra-arterial Thrombolysis - Alteplase (rt-PA) - Full Clinical Guideline

Reference no.: CG-T/2023/061

Aim / Scope

These guidelines are to help with the management of patients undergoing catheter delivered intra-arterial thrombolysis. They are of relevance to Pharmacy, nursing staff in the Radiology Department and high dependency nursing areas (Stepdown, HDU & ICU), and junior doctors (surgical and anaesthetic).

Background

Intra-arterial thrombolysis is generally used in the management of recently thrombosed (up to 2 weeks) prosthetic fem-pop grafts. Occasionally used in thrombosis of fem-pop vein grafts, native arteries and haemodialysis grafts / fistulae. Success can be expected in approximately 2/3 of patients but the major complication rate is relatively high (approx 12% overall including death, stroke and bleeding), especially so in elderly females. Treatment is started following an angiogram and may continue for up to 48 hours.

Administration issues

Alteplase

Alteplase is stock in X-Ray. Follow the drug monograph (available on Koha/intranet clinical guidelines) for details of preparation.

Initially a loading dose of 2.5 to 5mg is administered. This is given by the radiologist in X-ray or soon after the patient is transferred to the ward.

Then a maintenance infusion of 0.5 to 1mg/hour (2.5-5ml/hour) is given through the arterial catheter.

- ePMA has an order set titled '*INTRA-ARTERIAL THROMBOLYSIS REGIMEN*' which can be used for prescribing for SDU patients (Caution: ICU patients may be using paper or alternative system).
- The Syramed syringe pump has a setting for '*X-Ray – alteplase*' to facilitate infusion (search the CCU/ICU directory).

Maintenance infusion should be continued until the procedure is successful or abandoned unless the patient experiences bleeding complications.

During infusion the patient will be nursed in a "high dependency" area eg Stepdown, HDU or ICU.

If the patient experiences any major bleeding complication stop the alteplase (t-PA) infusion and please discuss with the consultant radiologist involved.

The patient will return to X-ray intermittently for further angiography to check progress and possibly reposition the infusion catheter. If the alteplase is to continue following angiography, check there is sufficient volume and expiry left on the infusion to continue until the next angiography. Prepare further infusions in X-ray if required as the HDU/ICU areas are less familiar with this route/indication.

Alteplase can be infused for up to 48 hours in total.

The infusion should not be discontinued without consulting the Consultant Radiologist involved in any circumstances other than severe haemorrhage.

The radiologist responsible for the case will be available in the department or by phone (out of hours).

Heparin

Alteplase should be administered in conjunction with heparin. This helps to prevent pericatheter thrombosis. The heparin will usually be administered via the sidearm of the arterial sheath through which the infusion catheter is placed although it may alternatively be given via the intravenous route.

The heparin is given at 1000 units/hour = 1ml/hour from the standard heparin syringe available from pharmacy. This must be on an emergency (blank) profile on the syringe pump (the 'heparin' profile is only used for weight based regimens)

Measurement of the APPT ratio is unhelpful due to the ongoing thrombolysis. Prescribe directly on ePMA* (or the ICU chart). If also using a paper heparin/anticoagulation chart, document clearly that this is a fixed rate infusion so that the ward teams do not try to provide weight based dosing or titration.

*ePMA has an order set titled '*INTRA-ARTERIAL THROMBOLYSIS REGIMEN*' which can be used. You are then able to select from options for both intra-arterial or intravenous heparin administration.

Documentation Controls

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