Delivering safe stroke care at hospitals without acute stroke units during the COVID-19 pandemic

Appendix 7: Complications following thrombolysis

Haemorrhage within 48 hours of alteplase administration

- If haemorrhage is suspected, either intracranial or extracranial, the first action should be to stop the infusion of alteplase, if it is still running, and/or antithrombotic treatment while definitive investigations take place.
- There may be a role for fibrinolysis inhibition and/or fibrinogen replacement following discussion with haematology.

Intracranial haemorrhage

- Suspect if:
  - increased neurological deficit/deteriorating LOC
  - new or increasing headache
  - acute hypertension (two successive BP readings >185/110 mmHg)
  - nausea and vomiting
- Actions:
  - Stop alteplase infusion
  - Contact stroke consultant
  - Arrange immediate CT brain scan
  - Take bloods for:
    - full blood count
    - coagulation screen
    - fibrinogen, fibrin degradation products (FDPs)
    - Ensure Group and Save in place
  - If diagnosis confirmed:
    - administer fresh frozen plasma (FFP) 12 ml/kg
    - administer IV tranexamic acid 1 g tds
    - discuss with haematology and potentially with neurosurgery

Extracranial haemorrhage

- Superficial bleeding (Venflon sites, venepuncture sites)
  - If the patient is haemodynamically stable, continue intravenous infusion of alteplase.
  - Apply direct pressure dressing and/or ice packs, if required
- Major bleeding
  - Suspect if:
    - hypotension
    - new local symptoms or signs (BP, abdominal or back pain)
  - Actions:
    - Stop alteplase infusion
    - Contact acute stroke consultant
    - Take bloods for:
      - full blood count
      - coagulation screen
      - fibrinogen
      - Ensure Group and Save in place
    - Ensure patent IV access

        - Resuscitate with IV fluids/blood, as appropriate
        - Investigate and inform specialist colleagues dependent on suspected source of haemorrhage
        - Administer FFP 12 ml/kg
        - Administer IV tranexamic acid 1 g tds
        - Discuss with haematology
- Haematology guidance for either intracranial or extracranial haemorrhage may include:
    - administration of cryoprecipitate or fibrinogen concentrate if there is depletion of fibrinogen
    - further therapy, which may be guided by results of coagulation tests.

Anaphylaxis

- Suspect if:
    - rash/urticaria
    - bronchospasm
    - angio-oedema
    - hypotension/shock
- Actions:
    - Stop alteplase infusion
    - Ensure airway secure and give 100% oxygen, unless contraindicated
    - Contact acute stroke consultant
    - Consider giving immediately the following:
        - Chlorpheniramine 10 mg IV
        - Hydrocortisone 200 mg IV
        - Epinephrine 500 micrograms IM (0.5 ml of 1:1000)
        - Rapid bolus infusion of normal saline
        - Salbutamol 2.5–5 mg nebulised
    - Ensure regular observations
    - If fails to respond to initial treatment, contact ICU as an emergency
    - In addition, consider use of C1 esterase inhibitor if cause felt to be true angio-oedema