Massive pulmonary embolism – haemodynamically unstable Patients

TARGET AUDIENCE	Secondary care
PATIENT GROUP	Adult patients in acute care setting

Clinical Guidelines Summary

Definition of Massive PE

PE associated with a systolic blood pressure <90 mmHg or a drop in systolic blood pressure of ≥ 40mmHg from baseline for a period >15 minutes (not otherwise explained by hypovolaemia, sepsis or new arrhythmia)

Clinically suspected massive PE:-

- **Heparinise with IV Unfractionated heparin bolus (5000 units) then IV infusion (18 units/kg/hour, up to max dose 1800 units/hour), adjusted to maintain APTT ratio of 1.8-2.8**
- **O_2**
- **IV fluids (Plasma-Lyte 148) and inotropic support**
- **If pregnant, inform on-call obstetric team immediately for consideration of early delivery**

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Transfer to CCU/ICU/HDU/Resus

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Emergency CTPA

(Cardiac echo if not available)

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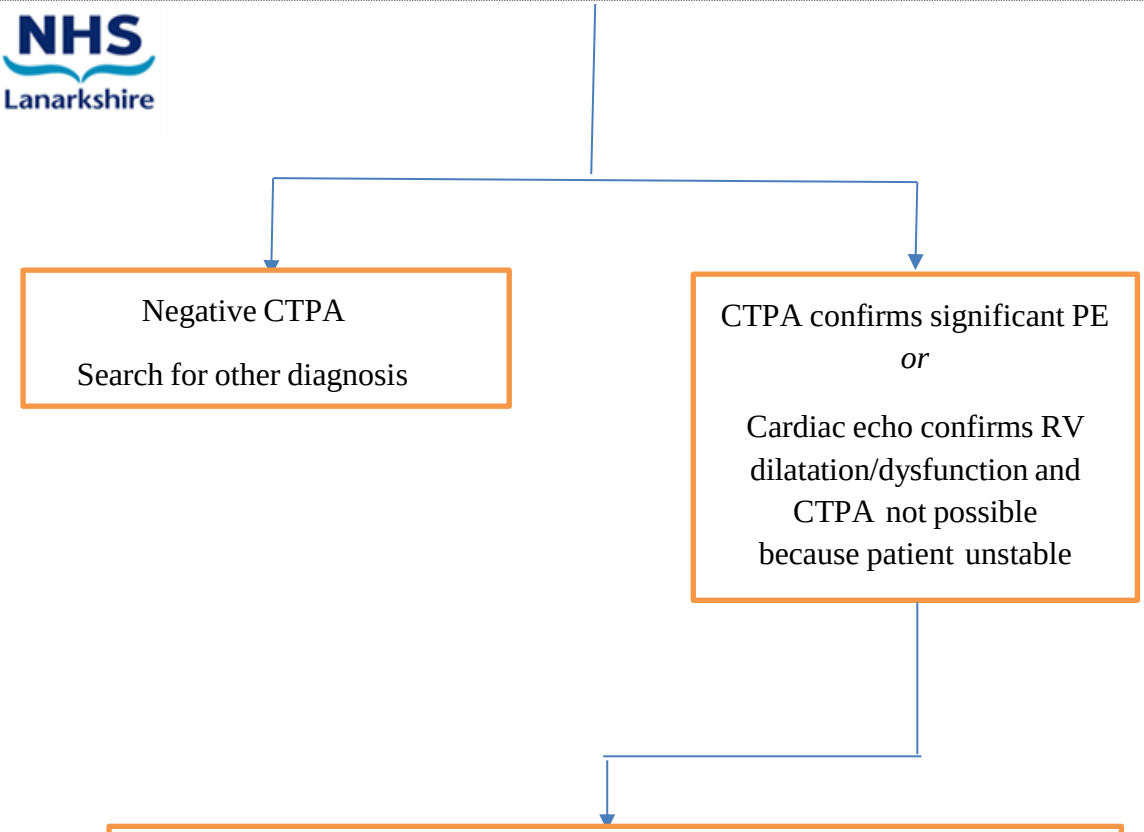

If persistent hypotension (SBP < 90mmHg), consider:-

- **Thrombolysis**
  - ♦ **alteplase 10mg IV over 1-2mins followed by 90mg over 2 hours (max total dose 1.5mg/kg if <65kg); initiate heparin to maintain APTT ratio 1.8-2.8** (dose may require transient reduction following thrombolysis)

  ***or* if above not available, consider using local regimen for MI (unlicensed for PE)**

If thrombolysis is contraindicated, consider

- **Percutaneous catheter fragmentation**
- **Surgical embolectomy**

Thrombolysis in patients who are peri-arrest or arrested

Massive pulmonary embolism is cause of arrest in 5-13% of patients. Patients with massive pulmonary embolism who progress to cardiac arrest have 65-90% mortality rate.
In some patients there may have not been sufficient time after presentation to perform confirmatory tests before they progress to cardiac arrest. If there is high clinical suspicion of PE, then thrombolytic therapy should be considered and decision to give thrombolytic approved by a senior clinician.

Please note that dose of Alteplase in case of cardiac arrest is different (out with license but total dose the same and in keeping with consensus view) as detailed below;

Alteplase 50mg IV bolus over 2 minutes, then continue CPR for at least 15-30 minutes. If restoration of spontaneous circulation (ROSC) is not achieved, consider repeat dose of 50 mg IV (adjust second dose if weight <65kg) and continuation of CPR. When thrombolytic drugs have been administered, consider continuing CPR attempts for at least 60-90 minutes before termination of resuscitation attempts

Appendices

1. Governance information for Guidance document

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CONSULTATION AND DISTRIBUTION RECORD	
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Distribution	

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