**High Risk Pulmonary Embolism**

**Confirmed or suspected PE with:**
- Shock
- SBP 40mmHg or more lower than known baseline
- Persistent profound bradycardia
- Hypotension (SBP<90 for >15 minutes not due to another cause) (Mortality 15-50%)

- Immediate treatment with unfractionated heparin
- Supplemental O2 if hypoxic
- Vasoactive medications for hypotension (norepinephrine preferred)
- Modest fluid administration, but aggressive fluid challenge not recommended

**Contraindication to systemic thrombolysis?**

**YES**
- **Systemic thrombolysis** if no contraindication
  - Tenecteplase per MMC protocol: use “Pulm/Crit Care Pulmonary Embolism” orderset
  - Continue CPR for 15 minutes after administration of thrombolytics
  - Systemic thrombolysis is **not** recommended in undifferentiated cardiac arrest
  - Can also consider surgical thrombectomy or catheter based therapies

**NO**
- Tenecteplase dosing and tips:
  - <60 kg 30mg IV once
  - 60-69kg 35mg IV once
  - 70-79kg 40mg IV once
  - 80-89kg 45mg IV once
  - >90kg 50mg IV once
  - Administer IV push over 5 seconds
  - Flush IV line with 10mL saline before and after administration
  - Tenecteplase is **not** compatible with dextrose.

**Systemic thrombolysis**
- Tenecteplase per MMC protocol: use “Pulm/Crit Care Pulmonary Embolism” orderset
- PIV suggested over central
- Continue heparin infusion during administration of tenecteplase

**Vital Signs Stabilize?**

**NO**
- Admit to ICU
- Continue supportive care

**YES**
- Continue supportive care

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**Contraindications to thrombolysis:**

Recommendations vary and are extrapolated from STEMI guidelines. The list below is a composite taken from multiple clinical guidelines. The risks and benefits of administration of thrombolytics in the critically ill patient with PE must be determined by the clinician at the bedside.

“The clinician is in the best position to judge the relative merits of fibrinolysis on a case-by-case basis” – AHA

“Contraindications to thrombolysis that are considered absolute, eg in acute myocardial infarction, might become relative in a patient with immediately life threatening high-risk PE” – ESC

**Absolute:** History of hemorrhagic stroke, ischemic stroke in past 3-6 months, CNS neoplasm or structural disease, major trauma/spine or brain surgery/head injury past 3 weeks, GI bleeding in past month, known bleeding

**Relative:** TIA past 6 months, age >75 years, current anticoagulation, pregnancy or 1 week postpartum, non-compressible punctures, traumatic or prolonged CPR, refractory hypertension, advanced liver disease, infective endocarditis, active peptic ulcer, internal bleeding past 2-4 weeks

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