

Massive PE Clinical Summary

- Massive PE results in RV Failure. This can be quite complex physiologically as the RV is VERY sensitive to any changes in preload, afterload and contractility.
- Fluids in suspected massive PE
 - o Generally, try to avoid large boluses as could worsen RV dilation and cause more hypotension via ventricular interdependence
- Vasopressors in massive PE (RV failure)
 - o Literature would favour norepinephrine as increases MAP and improves RV function without significant increase in pulmonary pressures
- Indications for thrombolysis in PE
 - o Massive PE (Def'n → PE with SUSTAINED hypotension, bradycardia or pulselessness)
 - Generally suggest FULL DOSE ALTEPLASE
 - 20 mg IVP then 80 mg over 2 hours (TOTAL OF 100 mg)
 - IF IN CARDIAC ARREST, 50 mg IVP over 1 minute. Can repeat 50 mg once in 15 minutes if no ROSC.
 - o Sub-massive PE (Def'n → NO SUSTAINED hypotension, but either RV dysfunction (based on echocardiography, CT, Troponin or ECG evidence) and/or myocardial necrosis (based on troponin elevation)
 - Some evidence for half-dose alteplase → 50 mg over 2 hours
 - Review the **MOPETT Trial** for more information re this
- Regarding the risk of ICH in ANY case of alteplase use. Risk is extremely low, less than 1%
- There is a risk tool that can be used to determine risk of ICH with thrombolysis for PE → **PE-CH Score**
 - Peripheral vascular disease = 1 point
 - Age > 65YO = 1 point
 - Prior cerebrovascular accident with residual deficit = 5 points
 - Prior myocardial infarction = 1 point
 - o Risk of intracranial hemorrhage following systemic thrombolysis:
 - 0 points = 1.2%
 - 1 point = 2.9%
 - 2 points = 3.4%
 - 5 points or more = 18%
- Use of inhaled pulmonary vascular vasodilators (i.e. inhaled nitric oxide)
 - o This can be considered if still hemodynamically unstable
 - o These drugs work to selectively vasodilate pulmonary vasculature without affecting systemic vasculature

- Improves oxygenation (by improved VQ mismatching)
 - Improves hemodynamics – could start pre-induction in an attempt to limit peri-intubation hypotension
 - Start at 20 ppm
 - CKHA does not have this
 - Alternative medications to CONSIDER would include inhaled nitroglycerin
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- Intubation and NIPPV are LAST resorts. Switching to positive pressure ventilation will decrease RV preload and could result in worsened hemodynamics. Attempt non-invasive ventilation FIRST such as HFNC, CPAP.