Pulmonary Embolism

Updated: 10/13/2017

- 1. Pulmonary embolism likelihood
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- 3. Segmental and submassive PE
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Pulmonary embolism - clinical suspicion



Subsegmental pulmonary embolism



Segmental and submassive pulmonary embolism



Massive pulmonary embolism



- Parenteral anticoagulation
 - Only UFH studied
 - Start immediately, but suspend prior to tPA
 - Resume after tPA if aPTT < 80 seconds¹

PLUS

- Systemic thrombolytic therapy if no contraindications
 - Systemic thrombolysis preferred over catheterdirected thrombolysis (CDT)*²

CDT can be considered in the following scenarios:

- Failure to improve with systemic thrombolysis
- High bleeding risk
- Shock that is likely to cause death before systemic therapy can take effect (hours)
- CDT improves RV dilation at 24 hrs, but unkonwn long-term benefits⁵

*Systemic thrombolysis preferred over CDT due to relative abundance of data.

*No head-to-head trials comparing systemic thrombolysis vs. CDT

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Inferior vena cava (IVC) filters



- Only two RCTs exist evaluating efficacy of IVC filters! 4.7
- Data is lacking to justify IVC filter use in majority of proposed scenarios⁸

Oral anticoagulant dosing for VTE



Bleeding risk calculators

Important notes:

- No bleeding risk tools have been validated for VTE treatment, only for prophylaxis and atrial fibrillation
- Observational studies suggest net clinical benefit of anticoagulation even with very high bleeding risk
- No RCTs exist demonstrating benefit of *withholding* anticoagulation based on high bleeding risk

	HAS-BLED (atrial fibrillation) 1 point each	IMPROVE (VTE prophylaxis for inpatients)
	HTN (SBP >165 mmHg)	Active gastroduodenal ulcer (4.5)
	Renal disease (ESRD, Cr >2.26, or transplant)	Bleeding within past 3 months (4)
	Liver disease (cirrhosis, AST/ALT >3x upper limit, Tbili >2x upper limit)	Admission platelets < 50 x10 ⁹ cells/L (4)
	History of stroke	Hepatic failure (INR >1.5) (2.5)
	History of bleeding or predisposition to bleeding	ICU/CCU stay (2.5)
	Labile INR	Central venous catheter (2)
	Alcohol or illicit drug use	Rheumatic disease (2)
	Taking antiplatelet or NSAID	Active malignancy (2)
	Age > 65	Age: 40-84 (1.5), ≥ 85 (3.5)
		Renal disease: GFR 30-59 mL/min (1), <30 mL/min (2.5)
High risk	≥ 3	≥ 7
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References

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