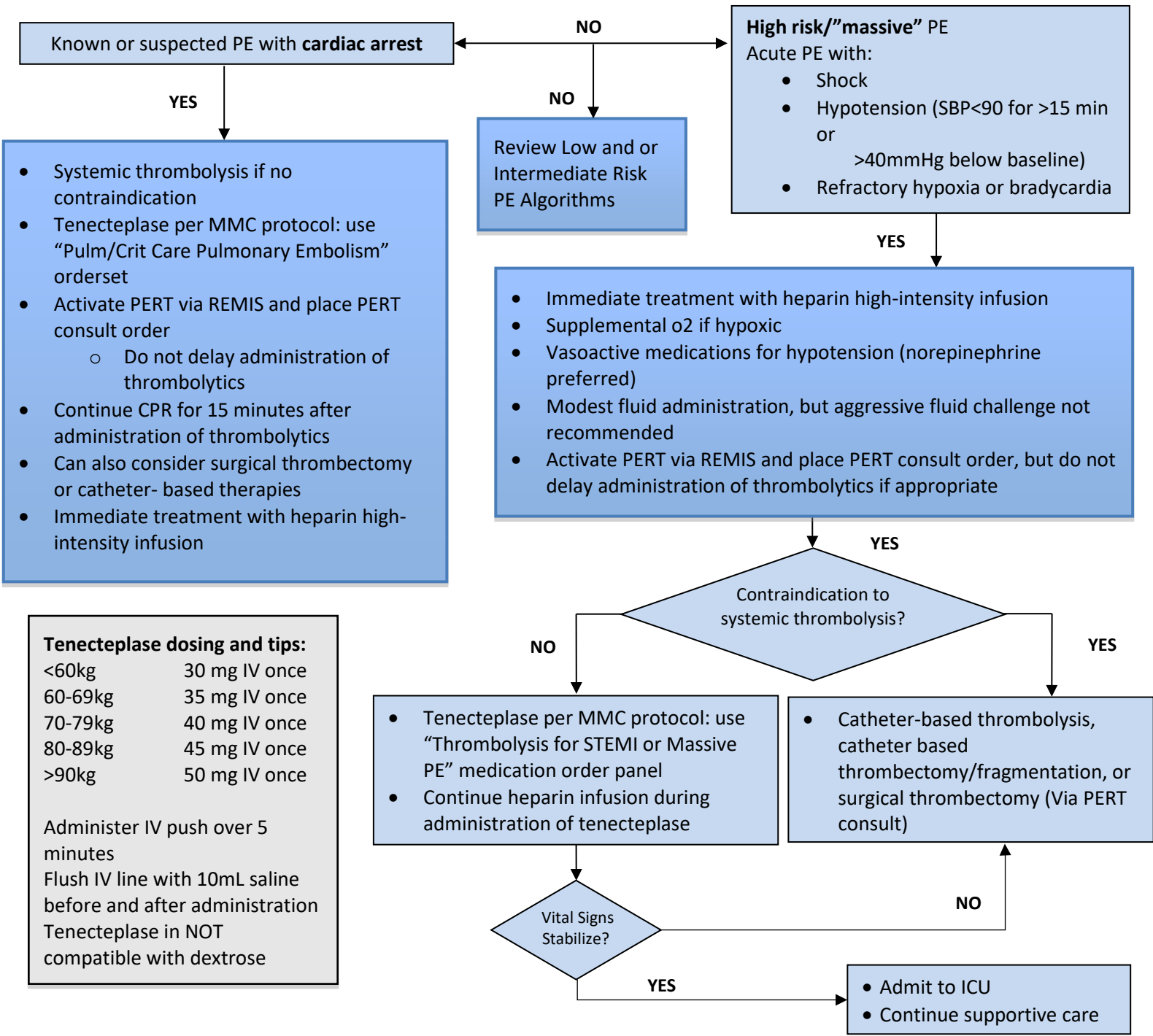


High Risk Pulmonary Embolism Treatment Pathway



Tenecteplase dosing and tips:

<60kg	30 mg IV once
60-69kg	35 mg IV once
70-79kg	40 mg IV once
80-89kg	45 mg IV once
>90kg	50 mg IV once

Administer IV push over 5 minutes
Flush IV line with 10mL saline before and after administration
Tenecteplase in NOT compatible with dextrose

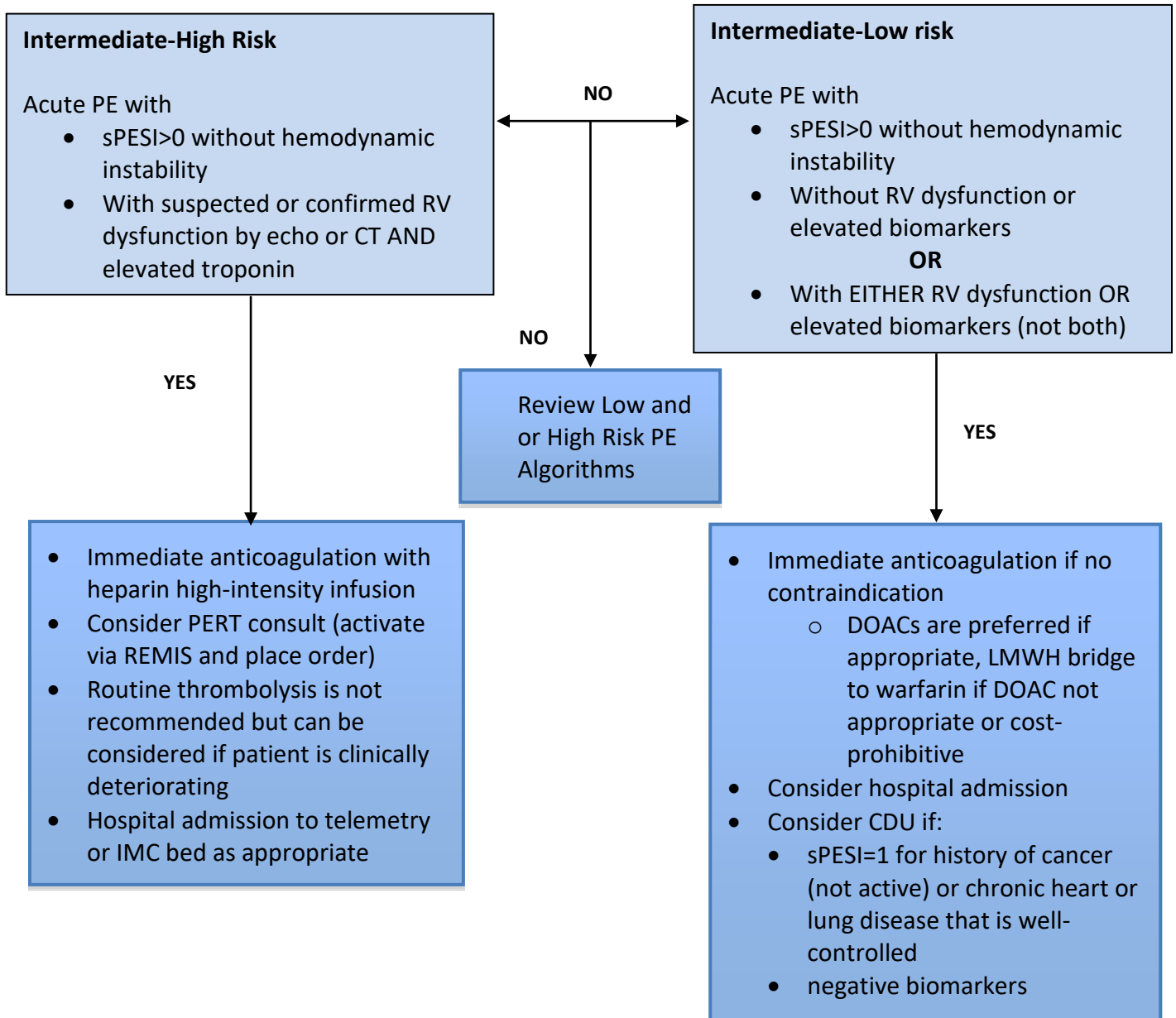
Contraindications to thrombolysis:
Recommendations vary and are extrapolated from STEMI guidelines. The list below is a composite taken from multiple clinical guidelines. The risks and benefits of administration of thrombolytics in the critically ill patient with PE must be determined by the clinician 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 myocardial infarction, might become relative in a patient with immediately life-threatening high-risk PE”-ESC

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

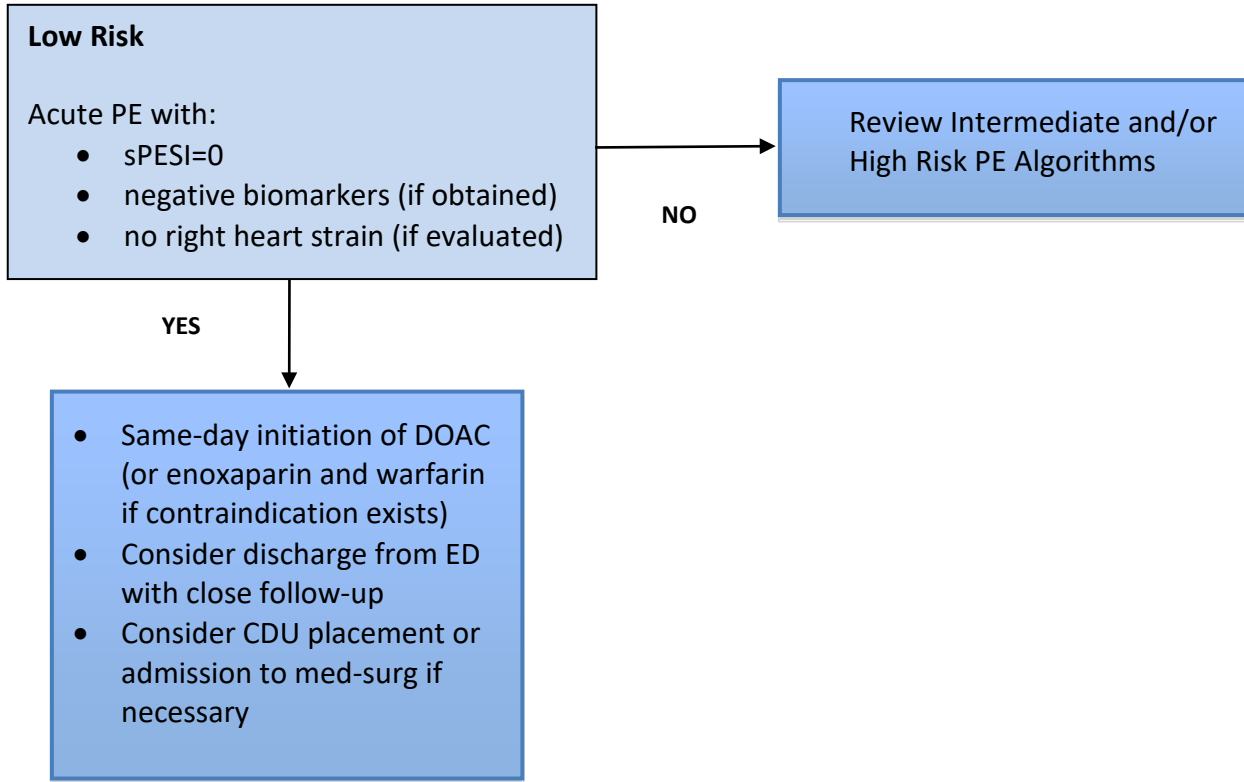
Relative: TIA past 6 months, age>75 years, current anticoagulation, pregnancy or <1 week postpartum, non-compressible punctures, traumatic or prolonged CPR, refractory hypertension, advanced liver disease, infective endocarditis, active peptic ulcer, internal bleeding past 2-4 weeks

Intermediate Risk Pulmonary Embolism Treatment Pathway



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Low Risk Pulmonary Embolism Treatment Pathway



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Guideline Evidence

Guideline Topic: ED treatment of Pulmonary Embolism

Author: Samantha L. Wood, MD

Date of Creation: 12/13 Sugg Update: 12/1/2014

Search Criteria: Pulmonary Embolism: treatment

Databases: Dynamed

Key Guidelines (Dates) ACCP 2012, ESC 2008, ACP/AAFP 20

#	Recommendation	Source	Classification	Level of Evidence
1	Treat immediately with heparin	ACCP	1	B
2	Initial treatment with LMWH suggested over UFH	ACCP	2	C
	LMWH or fundaparinux is recommended for initial treatment for most patients with non-high risk PE	ESC	1	A
	In pts with high bleeding risk or severe renal dysfunction, UFH with target aPTT 1.5-2.5x normal is recommended form of initial treatment	ESC	I	C
	Give therapeutic AC to patients with confirmed PE and no contraindications to AC with one of the following: LMWH, UFH, fundaprinox	AHA	I	A
	AC with UFH should be immediately started in high-risk PE	ESC	I	B

#	Recommendation	Source	Classification	Level of Evidence
	Patients with suspected or confirmed PE should be classified as high risk or non-high-risk based on presence of shock or hypotension	ESC	1	B
	Consider classifying patients with non-high-risk PE as intermediate-risk or low-risk based on imaging or biochemical markers of RV dysfunction and myocardial injury	ESC	IIA	B
3	Thrombolytic therapy not recommended for most patients	ACCP	1	C
4	Thrombolysis recommended in PE associated with hypotension and without high bleeding risk	ACCP	2	C
5	Thrombolysis suggested in PE with cardiogenic shock	ESC	1	A
6	embolectomy suggested if contraindication to thrombolysis, failed thrombolysis, or life-threatening shock	ACCP/ESC	2, 1	C/C
7	Suggest thrombolysis in patients with acute PE not associated with hypotension and with low bleeding risk whose initial clinical presentation, or clinical course after starting anticoagulant therapy, suggests high risk of developing hypotension	ACCP	2	C
8	If thrombolysis is used, peripheral infusion suggested over central	ACCP	2	C
10	Systemic hypotension should be corrected in patients with high risk PE	ESC	I	C

#	Recommendation	Source	Classification	Level of Evidence
11	Vasoactive drugs are recommended for hypotensive patients with PE	ESC	I	C
12	Aggressive fluid challenge is not recommended in high-risk PE	ESC	III	B
13	Oxygen should be given to patients with hypoxemia	ESC	I	C
	Fibrinolysis is reasonable for patients with massive acute PE and acceptable risk of bleeding complications	AHA	IIa	B
14	Use thrombolytic therapy in patients with high-risk PE presenting with cardiogenic shock and/or persistent arterial hypotension	ESC	I	A
15	If thrombolysis is absolutely contraindicated or has failed, surgical pulmonary embolectomy is recommended	ESC	I	C
16	Catheter embolectomy or fragmentation may also be considered as an alternative	ESC	IIb	C
17	Start AC immediately in patients with high or intermediate clinical probability of PE while workup is ongoing	ESC	I	C
	Give therapeutic AC during workup in patients with high or intermediate clinical probability of PE and no contraindications to AC	AHA	I	C
18	If high clinical suspicion of PE, treat with AC while awaiting test results	ACCP	2	C

#	Recommendation	Source	Classification	Level of Evidence
19	Routine use of thrombolysis in non-high-risk PE patients is not recommended but may be considered in selected patients with intermediate-risk PE	ESC	IIB	C
20	Consider fibrinolysis for patients with submassive acute PE with clinical evidence of adverse prognosis (new HD instability, worsening resp insufficiency, severe RV dysfunction, major myocardial necrosis) and low risk of bleeding complications	AHA	IIB	C
21	Do not use fibrinolysis in patients with low-risk PE	AHA	IIA	C
22	Do not use fibrinolysis in patients with submassive PE with minor RV dysfunction, minor myocardial necrosis, and no clinical worsening	AHA	III	B
23	Do not use fibrinolysis in patients with undifferentiated cardiac arrest	AHA	III	B
24	Catheter embolectomy and fragmentation or surgical embolectomy reasonable for patients with massive PE and contraindications to thrombolysis	AHA	IIA	C
25	Catheter embolectomy and fragmentation or surgical embolectomy reasonable for patients who remain unstable after receiving fibrinolysis	AHA	IIA	C
26	Consider either catheter embolectomy or surgical embolectomy for patients with submassive acute PE with clinical evidence of adverse prognosis (new HD instability, worsening resp insufficiency, severe RV dysfunction, major myocardial necrosis)	AHA	IIB	C
27				

#	Recommendation	Source	Classification	Level of Evidence
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#	Recommendation	Source	Classification	Level of Evidence
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