For patients w/ massive or high risk sub-massive PE
Thrombolysis or intervention
For patients in shock
Optimize hemodynamics
Most PE patients do not require IVF; Excess preload will worsen RV failure; avoid bolus unless clear evidence of hypovolemia
Optimize contractility
If low CO, consider use of milrinone or dobutamine; monitor for hypoTN
Reduce PVR
Keep SpO₂ > 90% w/ supp O₂. Avoid intubation if possible.
If intubated; avoid over distension (keep Pplat <30); consider low TV (6-8 cc/kg)
Optimize ventilation
Acidosis will increase PVR. Adjust ventilation to correct

Risk prognostication based on scores and clinical features:

<table>
<thead>
<tr>
<th>LOW</th>
<th>INTERMEDIATE</th>
<th>HIGH risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>3 - 4</td>
<td>5 - 7</td>
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<tr>
<td>(3.1%)</td>
<td>(6.8%)</td>
<td>(10%)</td>
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Bova score
30-day PE-related mortality

POCUS class
30-day all cause mortality

RV dysfunction
A4C RV diameter divided by LV diameter >0.9; TAPSE < 16mm

Elevated Cardiac Biomarkers
BNP > 90 or N-terminal pro-BNP > 500
Tnl > 0.4 ng/ml or TnT > 0.1 ng/ml

Normal RV function

Normal biomarkers

Stable hemodynamics

Massive PE
Sustained hypoTN (>15 min), shock or on vasopressors

Thrombolysis

Exclude contraindications. Indications:
- Massive PE (definite indication)
- High-risk submassive PE (risk/benefit)
Std dose alteplase = 100mg IV over 2 hrs
Low dose 0.5 mg/kg (up to 50mg IV)
2% risk of ICH and 6% risk of other major bleeding with tPA (PIETHO)

Systemic thrombolysis

Catheter directed lysis

Embolectomy

For patients with persistent shock despite thrombolysis; consider VA ECMO

Pulmonary vasodilators
Inhaled pulmonary vasodilators (prostacyclins or iNO) can decrease PVR

Optimize oxygenation

Acidosis will increase PVR. Adjust ventilation to correct