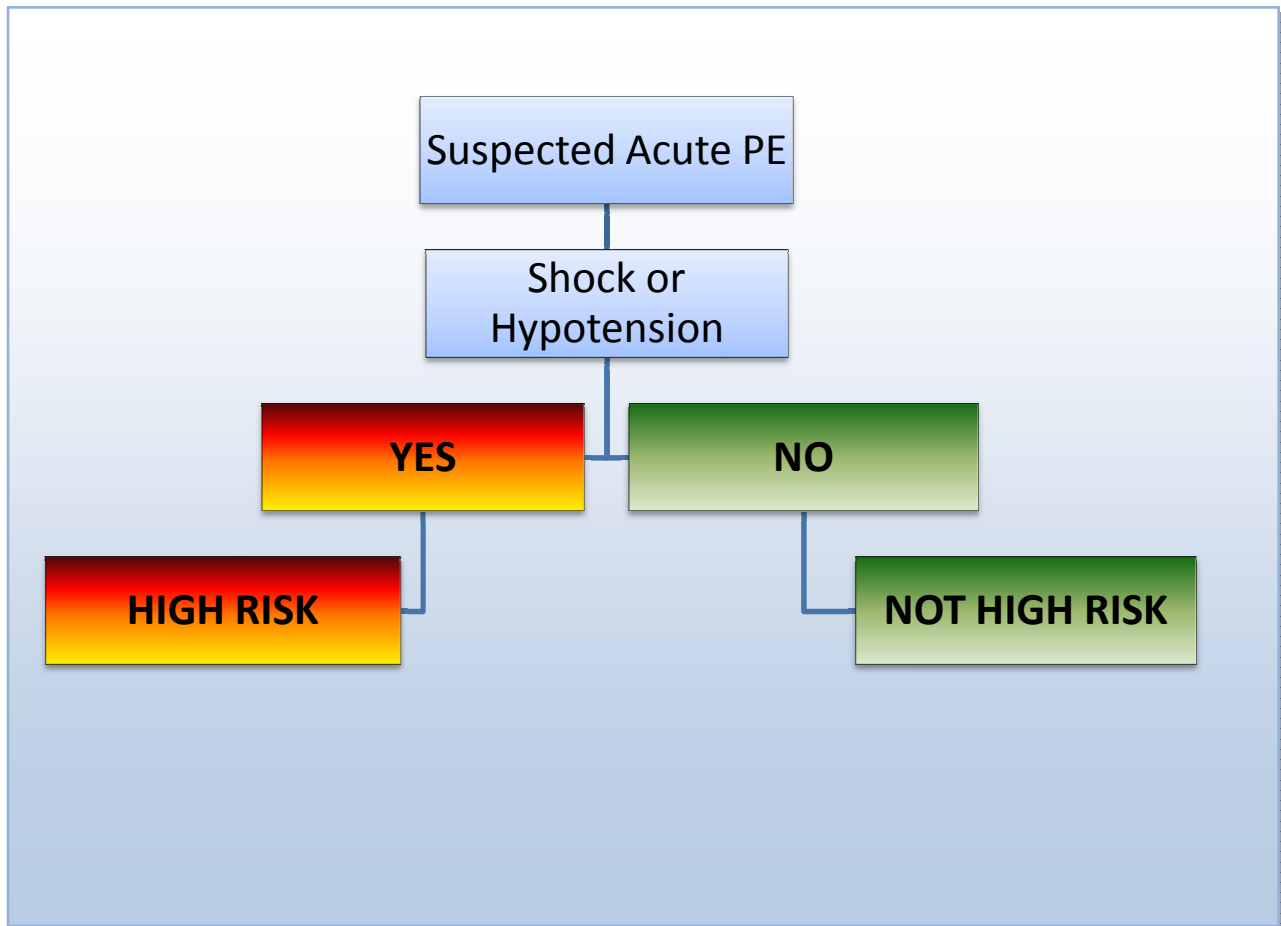


Risk Stratification and Management Plan

STEP 1: IDENTIFY PE

IMMEDIATE ASSESSMENT OF RISK AND SEVERITY: HIGH/NON HIGH RISK



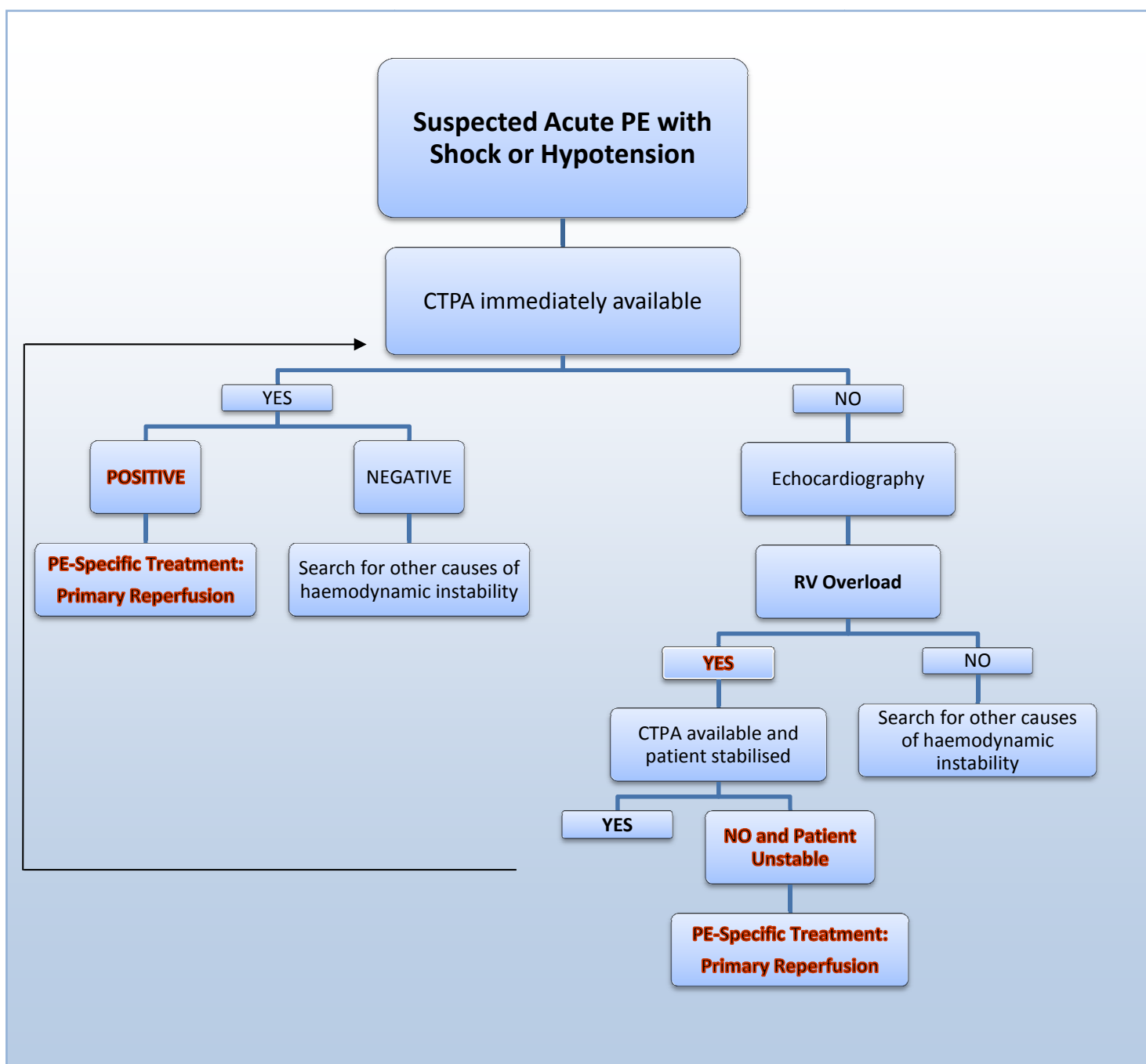
Acute Pulmonary Embolism

Risk Stratification and Management Plan



Lothian
Directorate of
Critical Care, RIE

STEP 2: IMMEDIATE DIAGNOSTIC ALGORITHM



Author: Dr K Kefala with input from N Hirani, J Tiernan, D Northridge, C Hay, R Pessotto

Written: August 2016

Update: August 2018

Acute Pulmonary Embolism

Risk Stratification and Management Plan



Lothian
Directorate of
Critical Care, RIE

STEP 3: COMPLETE RISK STRATIFICATION AND SEVERITY ASSESSMENT, ESCALATE AS APPROPRIATE

PE-related early Hospital Mortality Risk		RISK MARKERS			
		CLINICAL (Shock or Hypotension)	sPESI $\geq 1^a$	RV DYSFUNCTION ^b	MYOCARDIAL INJURY
HIGH		+	(+) ^c	+	+
NON HIGH	INTERMEDIATE-HIGH	—	+	+	+
	INTERMEDIATE-LOW	—	+	+	-
		—	+	-	+
	LOW RISK<1%)	-	-	-	-

^aSimplified Pulmonary Embolism Severity Index (sPESI) Score:

Risk Stratification	30 Day Mortality
0 points	1%
≥ 1 point	10.9%

^bNeither calculation of sPESI nor laboratory testing considered necessary in patients with hypotension or shock

^c RV Dysfunction: includes RV dilatation and/or an increased end-diastolic RV/LV diameter ratio (ratio 0.9-1.0), hypokinesia of the free RV wall, increased velocity of the tricuspid regurgitation jet or a combination of the above.

Parameter	Simplified Version
Age	1 point (if age>80years)
Cancer	1 point
Chronic Heart Failure	1 point
Chronic Pulmonary Disease	
Pulse rate >110bpm	1 point
SBP<100mmHg	1 point
SpO ₂ <90%	1 point

Author: Dr K Kefala with input from N Hirani, J Tiernan, D Northridge, C Hay, R Pessotto

Written: August 2016

Update: August 2018

Acute Pulmonary Embolism

Risk Stratification and Management Plan



Lothian
Directorate of
Critical Care, RIE

HIGH RISK and INTERMEDIATE-HIGH RISK PE



Contact RESP/ICU SpR



Arrange if possible and as appropriate:
Echocardiogram
Troponin
(Routine bloods and ECG)



Discuss with Multidisciplinary PE Team
(Members of the team):
Critical Care (K Kefala)
Respiratory Medicine (N Hirani/J
Tiernan)
Cardiology (D Northridge)
Interventional Radiology (C Hay)
Cardiothoracic Surgery (R Pessotto)
****Out of hours please contact relevant on call
specialties**

INTERMEDIATE-LOW RISK



Defined as

- Absence of Shock or Hypotension
- sPESI ≥ 1
- Evidence of RV dysfunction OR Myocardial Injury (elevated troponin).

**If Both positive stratify to
Intermediate-High Risk*

***If evidence of RV dysfunction and
troponin not available stratify to
Intermediate-High risk and re-asses when
troponin available*



Contact RESP SpR
Re-assess, if any concerns contact ICU SpR



Admit to the ward

Author: Dr K Kefala with input from N Hirani, J Tiernan, D Northridge, C Hay, R Pessotto

Written: August 2016

Update: August 2018

Acute Pulmonary Embolism

Risk Stratification and Management Plan

STEP 4: TREATMENT PLAN

CONFIRMED PE

PE with EITHER RV Strain
OR Elevated Troponin (One
of Two)
INTERMEDIATE-LOW RISK

Heparin
Anticoagulation
(LMWH)

PE with RV STRAIN
(abnormal CTScan, ECHO)
and Elevated troponin
INTERMEDIATE-HIGH RISK

Heparin Anticoagulation
(LMWH or
Consider UFH)

Re-assess again for evidence of
severity or increased severity
that suggest potential for benefit
from thrombolysis

EVIDENCE OF SHOCK OR RESPIRATORY FAILURE:

Any hypotension (SBP<90mmHg, or
>40mmHg from initial) for >15 mins
OR
Respiratory distress (SaO₂ <95% with Borg
score>8) or altered mental status
**In the presence of Respiratory Failure
and absence of shock: Consider PFO,
Discuss with Cardiology for Contrast Echo*

EVIDENCE OF MODERATE TO SEVERE RV STRAIN

RV dysfunction
(RV hypokinesis, or estimated RVSP>40mmHg
or RV/LV diameter > 0.9 on CTPA)
OR
Clearly elevated cardiac biomarkers (troponin)

PE With SHOCK
(SBP<90mmHg for
>15mins with RV Strain or
requiring inotropic
support NOT due to other
cause than PE)
HIGH RISK

Heparin
Anticoagulation
(UFH) or
i.v. Thrombolysis

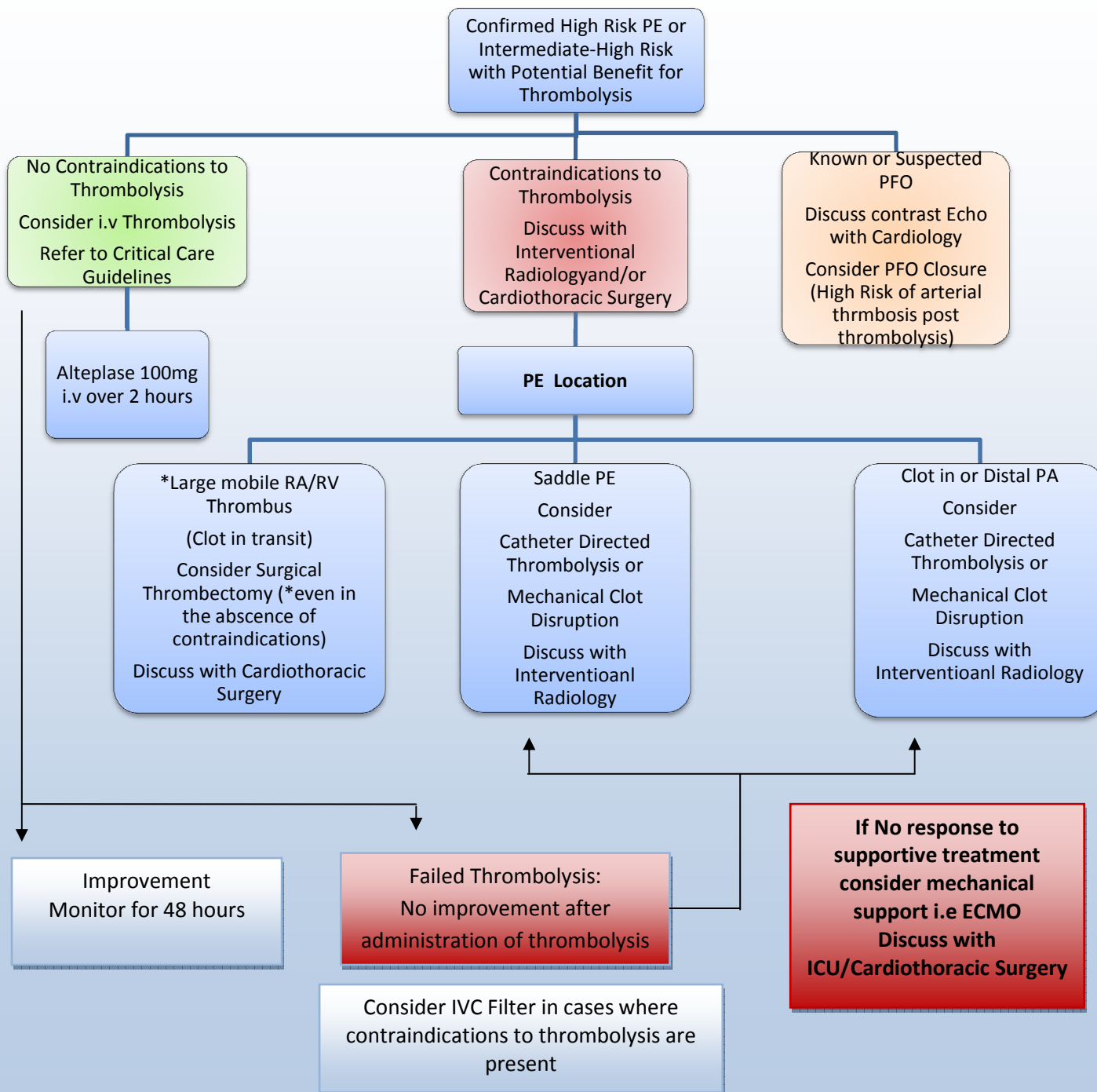
Acute Pulmonary Embolism

Risk Stratification and Management Plan



Lothian
Directorate of
Critical Care, RIE

STEP 4: TREATMENT PLAN FOR HIGH RISK PE



Author: Dr K Kefala with input from N Hirani, J Tiernan, D Northridge, C Hay, R Pessotto

Written: August 2016

Update: August 2018