

# Säkerhet och effektivitet vid hembehandling utav lungemboli med non vitamin k orala antikoagulantia

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- Kärlsektionen, SUS, Malmö

# Bakgrund I

- Incidensen VTE = DVT + LE är 5% under livstiden [Guyatt et al, 2012].
- Behandlingslängd utav VTE med AK är minst 3 månader för att förebygga progress/retrombotisering och embolisering [Guyatt et al, 2012, Yeh et al, 2014].
- AK-behandling vid akut LE har traditionellt påbörjats inneliggande med median på 6 vårddagar [Aujesky, 2008].
- Poliklinisering har studerats på 1990-talet [Wells et al, 1998] och rekommenderas numera i internationella riktlinjer till lågriskpatienter [Kearon et al, 2016].

# Bakgrund II

- Riskstratifiering av LE [Zondag et al, 2013, Den Exter et al, 2016], t.e.x pulmonary embolism severity index (PESI), har utvärderats i prospektiv randomiserad studie [Aujesky et al, 2013].
- Numera används sPESI [Jimenez et al, 2010].
- Fortsatt låg polikliniseringsgrad i de flesta industrialiserade länder [Roy et al, 2017]
- Nuförtiden används NOAK istället för warfarin [Schulman et al 2009, EINSTEIN 2012, Hokusai et al 2013, Agnelli et al, 2013.]



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Review Article

## Outpatient management of pulmonary embolism

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3 meta-analyser och 23 studier

Totalt 3036 patienter polikliniserade och 535 tidigt hemskickade

Selektion med HESTIA or PESI kriterier

< 2% VTE, retrombotisering och större blödning

< 3% mortalitet

**NOAK behandling endast till 35 patienter**

# PESI kriterier

## 7 Original and simplified PESI

Parameter	Original version <sup>214</sup>	Simplified version <sup>218</sup>
Age	Age in years	1 point (if age >80 years)
Male sex	+10 points	-
Cancer	+30 points	1 point
Chronic heart failure	+10 points	1 point
Chronic pulmonary disease	+10 points	
Pulse rate $\geq 110$ b.p.m.	+20 points	1 point
Systolic blood pressure <100 mm Hg	+30 points	1 point
Respiratory rate >30 breaths per minute	+20 points	-
Temperature <36 °C	+20 points	-
Altered mental status	+60 points	-
Arterial oxyhaemoglobin saturation <90%	+20 points	1 point

ORIGINAL ARTICLE

## Hestia criteria can safely select patients with pulmonary embolism for outpatient treatment irrespective of right ventricular function

Table 1 Hestia criteria

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Hestia criteria

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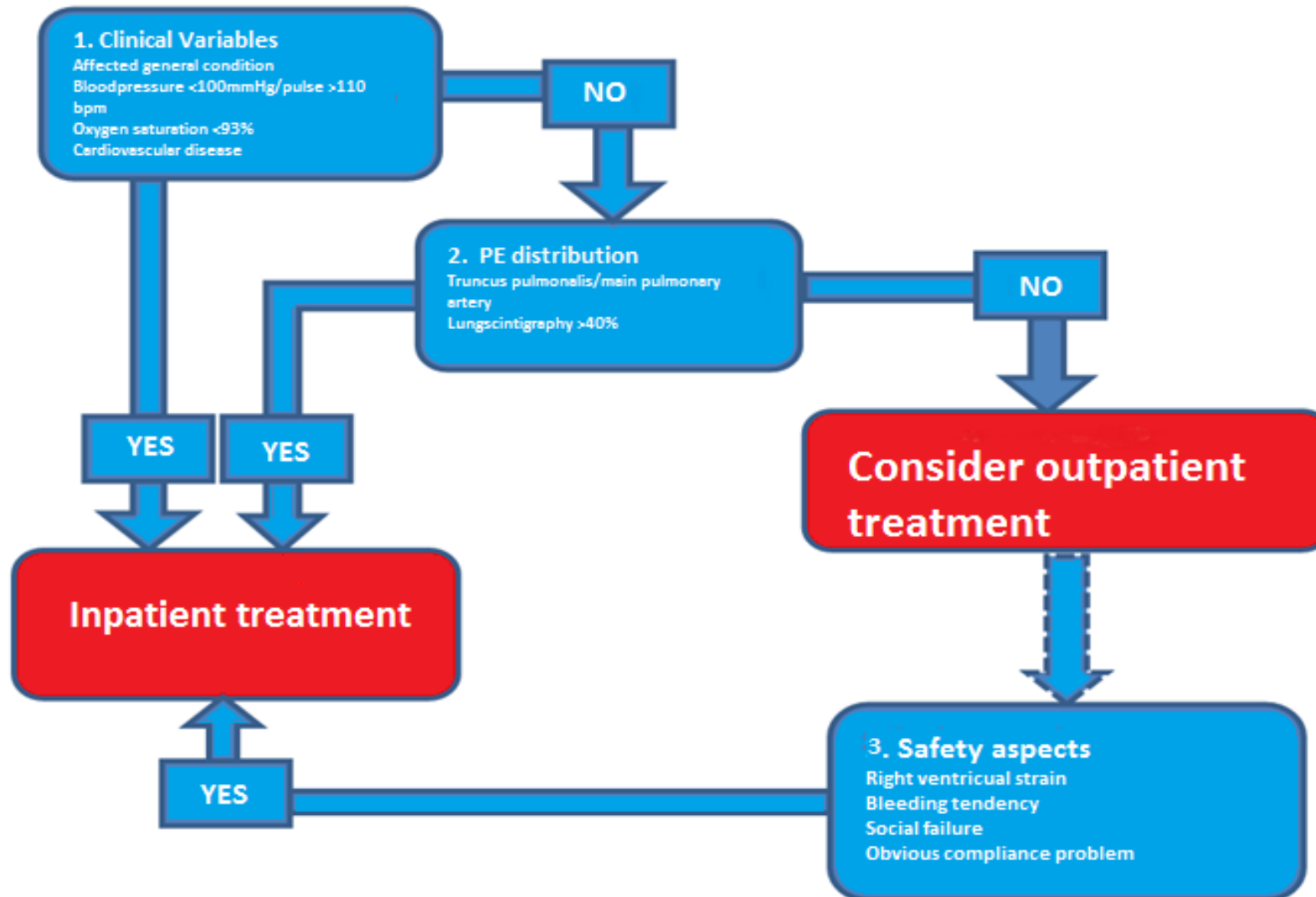
1. Hemodynamically unstable?\*
2. Thrombolysis or embolectomy necessary?
3. Active bleeding or high risk of bleeding?†
4. Oxygen supply to maintain oxygen saturation > 90% > 24 h?
5. Pulmonary embolism diagnosed during anticoagulant treatment?
6. Intravenous pain medication > 24 h?
7. Medical or social reason for treatment in the hospital > 24 h?
8. Creatinine clearance of less than 30 mL/min?‡
9. Severe liver impairment?§
10. Pregnant?
11. Documented history of heparin-induced thrombocytopenia?

If one of the questions is answered with YES,

The patient can NOT be treated at home

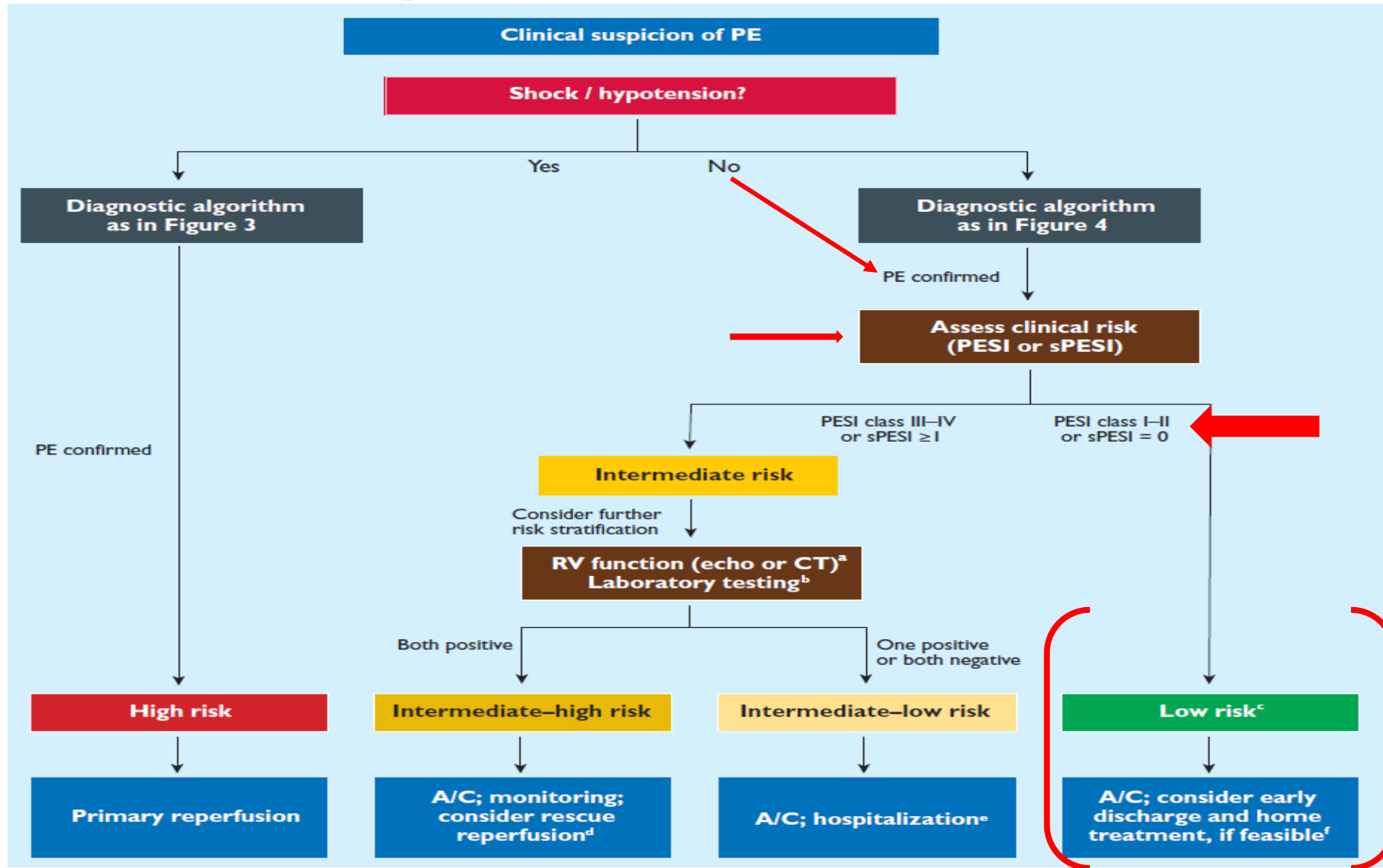
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# Riskstratifizierung, SUS.






# Riskstratifizierung LE, ESC 2014



# Syfte

## Efficacy and safety of outpatient treatment with direct oral anticoagulation in pulmonary embolism

R. Ghazvinian<sup>1</sup>  · A. Gottsäter<sup>1</sup> · J. L. Elf<sup>1</sup>

- Retrospektiv studie av VTE-morbiditet och totalmortalitet under 180 dagars uppföljning
- Inklusion:
- Patienter med LE diagnos
- Hemskickade direkt eller inom 24 timmar
- NOAK-behandling

# Metod

- Alla LE i AuriculaA, 881 patienter med NOAK i Region Skåne 2013-2015.
- 245 patienter polikliniserades
- Retrospektiv studie av komorbiditet, riskfaktorer, sPESI, kliniska undersökningar
- 6 månaders uppföljning av mortalitet, retrombotisering och blödning

# Resultat I

**Table 1** Characteristics of 245 patients in the Skåne region treated with direct oral anticoagulants (DOAC) because of PE during 2013–2015, n (%) or mean  $\pm$  SD

Patient characteristics	<i>n</i> = 245
Male/female gender	125 (51)/120 (49)
Age (years)	60.0 $\pm$ 17.2
Previous DVT	17 (7)
Previous PE	3 (1)
Concomitant diseases	
DVT	3 (1)
Congestive heart failure	27 (11)
COPD	11 (5)

Predisposing factors for VTE	
Pregnancy or post partum <sup>a,b</sup>	2 (2)
Surgical intervention	15 (6)
Cast therapy	8 (3)
Immobilisation	35 (14)
Travel > 5 h	18 (7)
Hormone therapy <sup>a</sup>	23 (9)
Ongoing tobacco use	46 (19)
Family history of VTE	27 (11)
PVC or CVC	2 (1)
Active malignancy	14 (6)
Trauma or fracture	12 (5)
Thrombophilia	29 (12)

# Resultat II

## Investigations

D-dimer positive <sup>c</sup>	107 (44)	Risk stratification, sPESI score	0	127 (52)
D-dimer NA	89 (36)		1	98 (40)
TNT positive <sup>c</sup>	110 (45)		2	18 (7)
TNT NA	57 (23)		3	1 (0.4)
CTPA	194 (79) ←		4	1 (0.4)
V/P SPECT	51 (20)			
CTPA and V/P SPECT	2 (1)			
Echocardiography	48 (20)			

**Table 2** Treatment data in 245 patients in the Skåne region treated with direct DOAC because of PE during 2013–2015, *n* (%)

	Total
Treatment for 6 months	238 (97)
< 6 months	7 (3)
Dabigatran <sup>a</sup>	2 (1)
Rivaroxaban <sup>a</sup>	225 (92)
Apixaban <sup>a</sup>	23 (9)

<sup>a</sup> Three patients changed from rivaroxaban to apixaban and one patient from rivaroxaban to dabigatran

# Resultat III

**Table 3** 6 months follow-up of 245 patients in the Skåne region treated with direct DOAC because of PE during 2013–2015, *n* (%)


At 6 months	Total, <i>n</i> = 245
Death	1 (0,4)
Major bleeding	1 (0.4)
Minor bleeding	5 (2)
Objective imaging for recurrent PE	9 (4)
Recurrent VTE	0 (0)
Newly detected malignancy	3 (1)

*DVT* Deep venous thromboembolism, *ED* emergency department



# Slutsats

## Efficacy and safety of outpatient treatment with direct oral anticoagulation in pulmonary embolism

R. Ghazvinian<sup>1</sup>  · A. Gottsäter<sup>1</sup> · J. L. Elf<sup>1</sup>

- Poliklinisering av selekterade LE-patienter med NOAK är säker och effektiv

#Swedishmedicalfootballteam

Tack för att ni lyssnade!

