Pulmoner Embolide Evde Tedavi Mümkün mü? Son rehberler

Dr. Nuri Tutar

Erciyes Üniversitesi Tıp Fakültesi Göğüs Hastalıkları Anabilim Dalı

Sunum Planı

- Akut Pulmoner Emboli hastaların yatış süreleri
- Akut Pulmoner Emboli hastalarının ayaktan tedavisi ve yatarak tedavisini karşılaştıran çalışmalar
- BTS 2018 evde tedavi rehberi önerileri
- Yatarak-ayaktan tedavi planı için akış şeması
- Gelecek çalışmalarda ne planlanıyor?

British Thoracic Society Guideline for the initial outpatient management of pulmonary embolism (PE)

Luke S G E Howard,[1] Steven Barden,[2] Robin Condliffe,[3] Vincent Connolly,[4] Christopher W H Davies,[5] James Donaldson,[6] Bernard Everett,[7] Catherine Free,[8] Daniel Horner,[9,10] Laura Hunter,[11] Jasvinder Kaler,[12] Catherine Nelson-Piercy,[13] Emma O'Dowd,[14] Raj Patel,[15] Wendy Preston,[16] Karen Sheares,[17] Campbell Tait[18]

Howard LSGE, *et al*. *Thorax* 2018;73:ii1–ii29. doi:10.1136/thoraxjnl-2018-211539

Avrupa da akut PE de hastane yatış süreleri

Table 1. Current hospital stay after pulmonary embolism in Europe

Article	Country, centers	Design	N	Hospital stay (days)
Balahura *et al.* [11]	Romania, 1	Retrospective cohort	221	Mean 10±5
Guijarro *et al.* [12]	Spain, nationwide	Prospective registry	165229	Mean 14±13
Paczynska *et al.* [13]	Poland, 1	Prospective cohort	215	Median 7 (range 2–22
Motte *et al.* [14]	Belgium, 10	Retrospective cohort	621	Mean 10±6
Zanova *et al.* [15]	Czech Republic, 1	Retrospective cohort	188	Median 7[a]
Werth *et al.* [16]	Germany, 1	Retrospective cohort	439	Median 9 (IQR 2–16)
Olié *et al.* [17]	France, nationwide	Retrospective cohort	34,179	Mean 10[a]
Casazza *et al.* [18]	Italy, 47	Prospective cohort	1716	Mean 10±7
Sharma *et al.* [19]	Croatia, 1	Retrospective cohort	165	Mean 15±9

Curr Opin Pulm Med 2018, 24:425–431

Table 9 Classification of patients with acute PE based on early mortality risk

Early mortality risk		Risk parameters and scores			
		Shock or hypotension	PESI class III-V or sPESI >1[a]	Signs of RV dysfunction on an imaging test[b]	Cardiac laboratory biomarkers[c]
High		+	(+)[d]	+	(+)[d]
Intermediate	Intermediate-high	-	+	Both positive	
	Intermediate-low	-	+	Either one (or none) positive[e]	
Low		-	-	Assessment optional; if assessed, both negative[e]	

ESC 2014, European Heart Journal

TREATMENT OF VENOUS THROMBOSIS WITH INTRAVENOUS UNFRACTIONATED HEPARIN ADMINISTERED IN THE HOSPITAL AS COMPARED WITH SUBCUTANEOUS LOW-MOLECULAR-WEIGHT HEPARIN ADMINISTERED AT HOME

MARIA M.W. KOOPMAN, M.D., PAOLO PRANDONI, M.D., FRANCO PIOVELLA, M.D., PAUL A. OCKELFORD, M.D., DESIDERIUS P.M. BRANDJES, M.D., JAN VAN DER MEER, M.D., ALEXANDER S. GALLUS, M.D., GÉRALD SIMONNEAU, M.D., COLIN H. CHESTERMAN, M.D., MARTIN H. PRINS, M.D., PATRICK M.M. BOSSUYT, PH.D., HANNEKE DE HAES, PH.D., ANGELIQUE G.M. VAN DEN BELT, M.D., LUC SAGNARD, M.D., PASCAL D'AZEMAR, M.D., AND HARRY R. BÜLLER, M.D., FOR THE TASMAN STUDY GROUP*

Abstract *Background.* An intravenous course of standard (unfractionated) heparin with the dose adjusted to prolong the activated partial-thromboplastin time to a desired length is the standard initial in-hospital treatment for patients with deep-vein thrombosis, but fixed-dose subcutaneous low-molecular-weight heparin appears to be as effective and safe. Because the latter treatment can be given on an outpatient basis, we compared the two treatments in symptomatic outpatients with proximal-vein thrombosis but no signs of pulmonary embolism.

Methods. We randomly assigned patients to adjusted-dose intravenous standard heparin administered in the hospital (198 patients) or fixed-dose subcutaneous low-molecular-weight heparin administered at home, when feasible (202 patients). We compared the treatments with respect to recurrent venous thromboembolism, major bleeding, quality of life, and costs.

Results. Seventeen of the 198 patients who received standard heparin (8.6 percent) and 14 of the 202 patients who received low-molecular-weight heparin (6.9 percent) had recurrent thromboembolism (difference, 1.7 percentage points; 95 percent confidence interval, −3.6 to 6.9). Major bleeding occurred in four patients assigned to standard heparin (2.0 percent) and one patient assigned to low-molecular-weight heparin (0.5 percent; difference, 1.5 percentage points; 95 percent confidence interval, −0.7 to 2.7). Quality of life improved in both groups. Physical activity and social functioning were better in the patients assigned to low-molecular-weight heparin. Among the patients in that group, 36 percent were never admitted to the hospital at all, and 40 percent were discharged early. This treatment was associated with a mean reduction in hospital days of 67 percent, ranging from 29 percent to 86 percent in the various study centers.

Conclusions. In patients with proximal-vein thrombosis, treatment with low-molecular-weight heparin at home is feasible, effective, and safe. (N Engl J Med 1996;334: 682-7.)

Thrombosis Research 126 (2010) e1–e5

Contents lists available at ScienceDirect

Thrombosis Research

journal homepage: www.elsevier.com/locate/thromres

Regular Article

Home treatment in pulmonary embolism

Remedios Otero [a,*], Fernando Uresandi [b], David Jiménez [c], Miguel Ángel Cabezudo [d], Mikel Oribe [e],

18 YAŞ ÜSTÜ
SPİRAL BT DE EMBOLİ
DMAH+WARFARİN
3 AYLIK TAKİP

- DIŞLAMA KRİTERLERİ
- A clinical score >2 points
- Hemodynamic instability at enrolment (de c blood pressure <90mmHg, or need of inotropic drugs sup
- T-troponin concentrations of ≥0.1 ngmL-1
- Oxygen saturation <93%;
- Need of hospitalization for other comorbi
- Dyspnea (New York Heart Association [NY
- Severe chronic obstructive pulmonary dis ere asthma;
- Active bleeding or high risk of bleeding (s ng physician);
- Recent surgery (in the last fifteen days);
- Pregnancy; morbid obesity (bodymass inc
- Right ventricular dysfunction assessed by TE)

Arch Bronconeumol. 2007;43(11):617-22 619

NTOS ADVERSOS A CORTO PLAZO EN PACIENTES
BOLIA PULMONAR

TABLA III
Desarrollo de una puntuación clínica de predicción

Variables	Puntuación
Antecedente de hemorragia reciente	4
Cáncer metastásico	4
Creatinina > 2 mg/dl	3
Cáncer sin metástasis	2
Antecedente de inmovilización médica	2
Ausencia de cirugía reciente	1
Edad > 60 años	1

Si un paciente presenta una puntuación de 2 o menor, tiene un riesgo bajo de desarrollar complicaciones a corto plazo por la tromboembolia pulmonar.

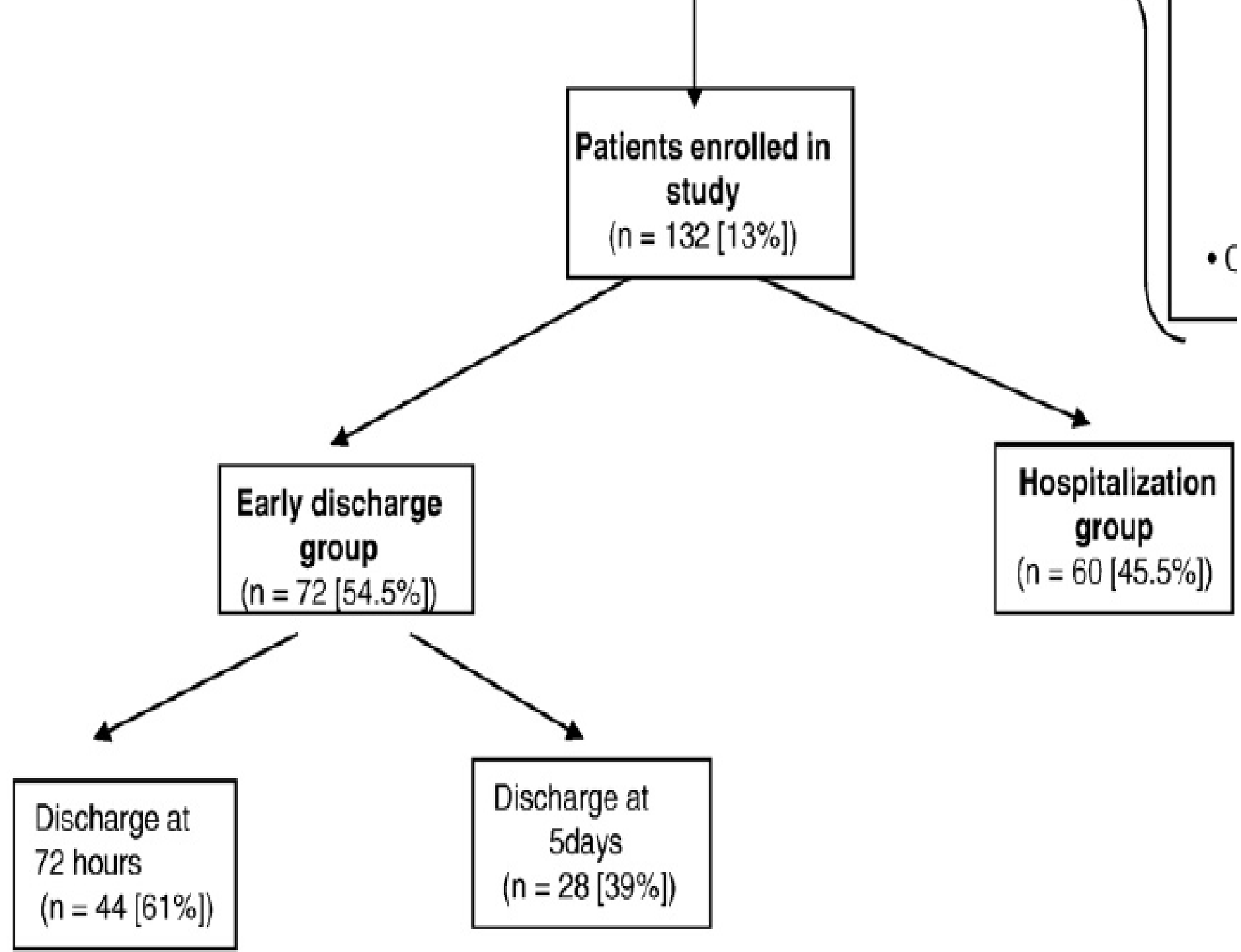

Patients enrolled in study
(n = 132 [13%])
Early discharge group
(n = 72 [54.5%])
Hospitalization group
(n = 60 [45.5%])
Discharge at 72 hours
(n = 44 [61%])
Discharge at 5days
(n = 28 [39%])

Table 3

Outcome events.

	Early discharge group ($n=72$)	Standard hospitalization group ($n=60$)	Relative risk (95% CI)	*P* value
Days of hospitalization	3.4±1.1	9.3±5.7	-	0.00
Overall mortality	3 (4.2)	5 (8.3)	0.50 (0.12-2.01)	0.26
**Short-term mortality*	2 (2.8)	0	-	0.30
Non-fatal recurrences	2 (2.8)	2 (3.3)	0.83 (0.12-5.74)	0.62
**Short-term non-fatal recurrences*	1 (1.4)	0	-	0.54
Bleeding	4 (5.5)	3 (5.0)	1.11 (0.26-4.77)	0.60
Major bleeding	1 (1.4)	1 (1.6)	0.83 (0.05-13.04)	0.70
Minor bleeding	3 (4.2)	2 (3.3)	1.25 (0.22-7.24)	0.59

*Within the first 10 days after diagnosis.

- SEÇİLMİŞ DÜŞÜK RİSKLİ HASTALARIN ERKEN TABURCU EDİLMESİ MORTALİTE-NÜKS VE KANAMA AÇISINDAN RİSK OLUŞTURMUYOR.

Outpatient versus inpatient treatment for patients with acute pulmonary embolism: an international, open-label, randomised, non-inferiority trial

Drahomir Aujesky, Pierre-Marie Roy, Franck Verschuren, Marc Righini, Joseph Osterwalder, Michael Egloff, Bertrand Renaud, Peter Verhamme, Roslyn A Stone, Catherine Legall, Olivier Sanchez, Nathan A Pugh, Alfred N'gako, Jacques Cornuz, Olivier Hugli, Hans-Jürg Beer, Arnaud Perrier, Michael J Fine, Donald M Yealy

Lancet 2011; 378: 41-48

Summary

Background Although practice guidelines recommend outpatient care for selected, haemodynamically stable patients

Fransa Belçika İsviçre ABD den toplamda 19 merkez, 2007-2010 arası 344 hasta

- Çalışmaya alma kriterleri
- Akut emboli
- 18 yaş üstü
- PESİ 1 veya 2

PESI

Parametre	Oriijinal versiyon
Yaş	Yaş
Erkek cinsiyet	+ 10 puan
Kanser	+ 30 puan
KKY	+ 10 puan
Kronik pulmoner hastalık	+ 10 puan
Nabız ≥ 110/dk	+ 20 puan
Sistolik kan basıncı <100 mmHg	+ 30 puan
Solunum sayısı >30/dk	+ 20 puan
Vücut sıcaklığı <36'	+ 20 puan
Bozulmuş bilinç durumu	+ 60 puan
Arteriyel oksijen satürasyonu <%90	+ 20 puan
	Risk Değe
	Sınıf 1:≤65 puan 30 günlük mortalite çok düşük (%0-1.6) Sınıf II:66-85 puan Düşük mortalite riski (%1.7-3.5) Sınıf III:86-105 puan Orta mortalite riski (%3.2-7.1) Sınıf IV:106-125 puan Yüksek mortalite riski (%4.0-11.4-7) Sınıf V:106-125 puan Çok yüksek mortalite riski (%410.0-24.5)

- **DIŞLAMA KRİTERLERİ**
- Arteriyel hipoksemi (oda havasında pulse oksimetrede oksijen saturasyonu <% 90'dan düşük veya arteriyel kan gazı analizinde 60 mm Hg'den düşük bir kısmi oksijen basıncı),
- Sistolik kan basıncı 100 mm Hg'den daha az,
- Parenteral opioid gerektiren göğüs ağrısı
- Aktif kanama,
- Yüksek kanama riski (önceki 10 gün içinde inme, 14 gün öncesinde gastrointestinal kanama veya trombosit sayısı <75000)
- Ağır böbrek yetmezliği (GFR <30),
- Aşırı obezite (vücut kitlesi> 150 kg),
- Heparine bağlı trombositopeni veya heparinlere alerji öyküsü,
- Tanı anında INR ≥2 olanlar
- Tedaviye herhangi bir engel teşkil edenler (örneğin alkolun kötüye kullanımı, yasadışı uyuşturucu kullanımı, psikoz, demans, hapis veya evsizlik),
- Gebelik

- Hastalar 1 e 1 randomize edilerek ayaktan ve yatarak tedavi ediliyolar.
- 90. günde nüks, kanama ve mortalite bakılıyor.
- Tedavi
- Enoxiparin+warfarin

	Outpatient group	Inpatient group	Difference in percentages ($\%_{outpatient}$–$\%_{inpatient}$)	Upper 95% CL for difference	p value*
Primary analysis outcomes within 90 days†					
Recurrent VTE	1 (0·6%)‡	0	0·6%	2·7%	0·011
Major bleeding	3 (1·8%)	0	1·8%	4·5%	0·086
Intramuscular	2 (1·2%)	0	1·2%	3·6%	0·031
Menometrorrhagia	1 (0·6%)	0	0·6%	2·7%	0·011
Overall mortality	1 (0·6%)§	1 (0·6%)¶	0%	2·1%	0·005
Primary analysis outcomes within 14 days†					
Recurrent VTE	0	0	0%	1·7%	0·003
Major bleeding	2 (1·2%)	0	1·2%	3·6%	0·031
Intramuscular	2 (1·2%)	0	1·2%	3·6%	0·031
Menometrorrhagia	0	0	0%	1·7%	0·003
Overall mortality	0	0	0%	1·7%	0·003
Per-protocol outcomes within 90 days‖					
Recurrent VTE	1 (0·6%)‡	0	0·6%	2·9%	0·014
Major bleeding	2 (1·2%)	0	1·2%	3·8%	0·040
Intramuscular	2 (1·2%)	0	1·2%	3·8%	0·040
Menometrorrhagia	0	0	0%	1·8%	0·004
Overall mortality	1 (0·6%)§	1 (0·6%)¶	0%	2·1%	0·007

- Bu çalışmanın sonucunda PESI 1 veya 2 olan hastaların ayaktan tedavisi, yatarak tedaviye göre hem etkinlik hem de güvenlik açısından benzerdir.

Journal of Thrombosis and Haemostasis, **9**: 1500–1507 DOI: 10.1111/j.1538-7836.2011.04388.x

ORIGINAL ARTICLE

Outpatient treatment in patients with acute pulmonary embolism: the Hestia Study

2011

W. ZONDAG,* I. C. M. MOS,* D. CREEMERS-SCHILD,† A. D. M. HOOGERBRUGGE,‡ O. M. DEKKERS,§

Hollanda da yapılıyor, 297 hasta alınıyor çalışmaya
Akut embolisi olan hastalar
Nadroparin+ warfarin veriliyor
3 aylık takip yapılıyor

Table 1 Exclusion criteria for outpatient treatment

Is the patient hemodynamically unstable?*	Yes	No
Is thrombolysis or embolectomy necessary?	Yes	No
Active bleeding or high risk of bleeding?†	Yes	No
More than 24 h of oxygen supply to maintain oxygen saturation > 90%?	Yes	No
Is pulmonary embolism diagnosed during anticoagulant treatment?	Yes	No
Severe pain needing intravenous pain medication for more than 24 h?	Yes	No
Medical or social reason for treatment in the hospital for more than 24 h (infection, malignancy, no support system)?	Yes	No
Does the patient have a creatinine clearance of < 30 mL min^{-1}?‡	Yes	No
Does the patient have severe liver impairment?§	Yes	No
Is the patient pregnant?	Yes	No
Does the patient have a documented history of heparin-induced thrombocytopenia?	Yes	No

If the answer to one of the questions is 'yes', the patient cannot be treated at home in the Hestia Study

Hestia Kriterleri	
Hasta hemodinamik olarak unstabil* mi?	Evet/Hayır
Tromboliz veya embolektomi gerekli mi?	Evet/Hayır
Aktif kanama veya kanama için yüksek risk**?	Evet/Hayır
Oksijen satürasyonunu >%90 olabilmesi için 24 saatten fazla oksijen desteği?	Evet/Hayır
Pulmoner emboli antikoagülan tedavi sırasında mı tanı aldı ?	Evet/Hayır
>24 saat intravenöz ağrı kesici gerektiren şiddetli ağrı?	Evet/Hayır
>24 saat hastanede tedavi için medikal veya sosyal neden ?	Evet/Hayır
Hasta <30mL/dakika kreatinin klirensine mi sahip?	Evet/Hayır
Hasta ağır karaciğer yetmezliğine mi sahip?	Evet/Hayır
Hasta gebe mi?	Evet/Hayır
Hastanın dokümente edilmiş heparinin tetiklediği trombositopeni hikayesi var mı ?	Evet/Hayır

Table 3 Adverse clinical outcome during 3 months of follow-up ($n = 297$)

Clinical outcome	No.	Percentage (95% CI)
Total recurrences	6	2.0 (0.75–4.3)
Fatal recurrent PE	0	0 (0–1.2)
Non-fatal recurrent PE	5	1.7 (0.55–3.9)
Non-fatal recurrent DVT	1	0.34 (0.0082–1.9)
Major bleeding complications	2	0.67 (0.082–2.4)
Fatal bleeding	1	0.34 (0.0082–1.9)
Non-fatal major bleeding	1	0.34 (0.0082–1.9)
Clinically relevant non-major bleeding	15	5.1 (2.9–8.2)
All-cause mortality	3	1.0 (0.21–2.9)

- Bu çalışma sonucunda seçilmiş akut PE hastalarının ayaktan tedavisi düşük nüks-mortalite ve kanama oranları ile sağlanabileceği gösterilmiştir.

Blood Coagulation, Fibrinolysis and Cellular Haemostasis Thromb Haemost 2013; 109: 47–52

Comparison of two methods for selection of out of hospital treatment in patients with acute pulmonary embolism

Wendy Zondag[1]*; Paul L. den Exter[1]*; Monique J. T. Crobach[2]; Anneke Dolsma[3]; Marjolein L. Donker[4]; Michiel Eijsvogel[5];

This is a post-hoc analysis on data from the Hestia study, which was a multi-centre prospective cohort study performed in 12 hospitals in The Netherlands.

- Hestia düşük riskli hastaların hepsi evde tedavi edildi.
- Hestia kriterlerine göre hastaların 53% ü düşük riskli iken sPESI kullanıldığında bu oran 59% idi.
- sPESI tarafından düşük riskli olarak tanımlanan hastaların 275'inin 86'sında (% 31) Hestia kriterlerine göre hastaneye yatış belirtisi vardı.
- Hastaneye kabul edilmenin başlıca nedenleri: 34 hastada (% 40) medikal veya sosyal nedenler, 24 hastada (% 28) hipoksi, yedi hastada (% 8) yüksek kanama riski ve yedi hastada intravenöz ağrı tedavisi idi (% 8).

What does this paper add?

- In this study two methods for selection of patients with PE for outpatient treatment were compared: the Hestia criteria and the simplified Pulmonary Embolism Severity Index (sPESI).
- Both scores appeared to classify different patients as low-risk. In a proportion of the sPESI low-risk patients, hospitalisation was required because of medical or practical reasons. In addition, a proportion of the sPESI high-risk patients were safely managed at home with use of the Hestia criteria.
- Both scores had comparable test characteristics in predicting 30-day mortality.

Outpatient Management of Pulmonary Embolism in Cancer: Data on a Prospective Cohort of 138 Consecutive Patients

Carme Font, MD, PhD[a,*]; Alberto Carmona-Bayonas, MD, PhD[b,*]; Aranzazu Fernández-Martinez, MD[a];

© JNCCN—Journal of the National Comprehensive Cancer Network | Volume 12 Number 3 | March 2014

Çalışmaya alma kriterleri
Aktif kanser+ Akut emboli

Dışlama kriterleri
Sistolik kan basıncı 100 mm Hg'den az,
Arteriyel oksijen basıncı 60 mm Hg'den az veya pulse oximetri %90'dan az,
Aktif kanama, trombosit 50.000 / mm3 veya daha az,
Böbrek yetmezliği,
Sosyal problem

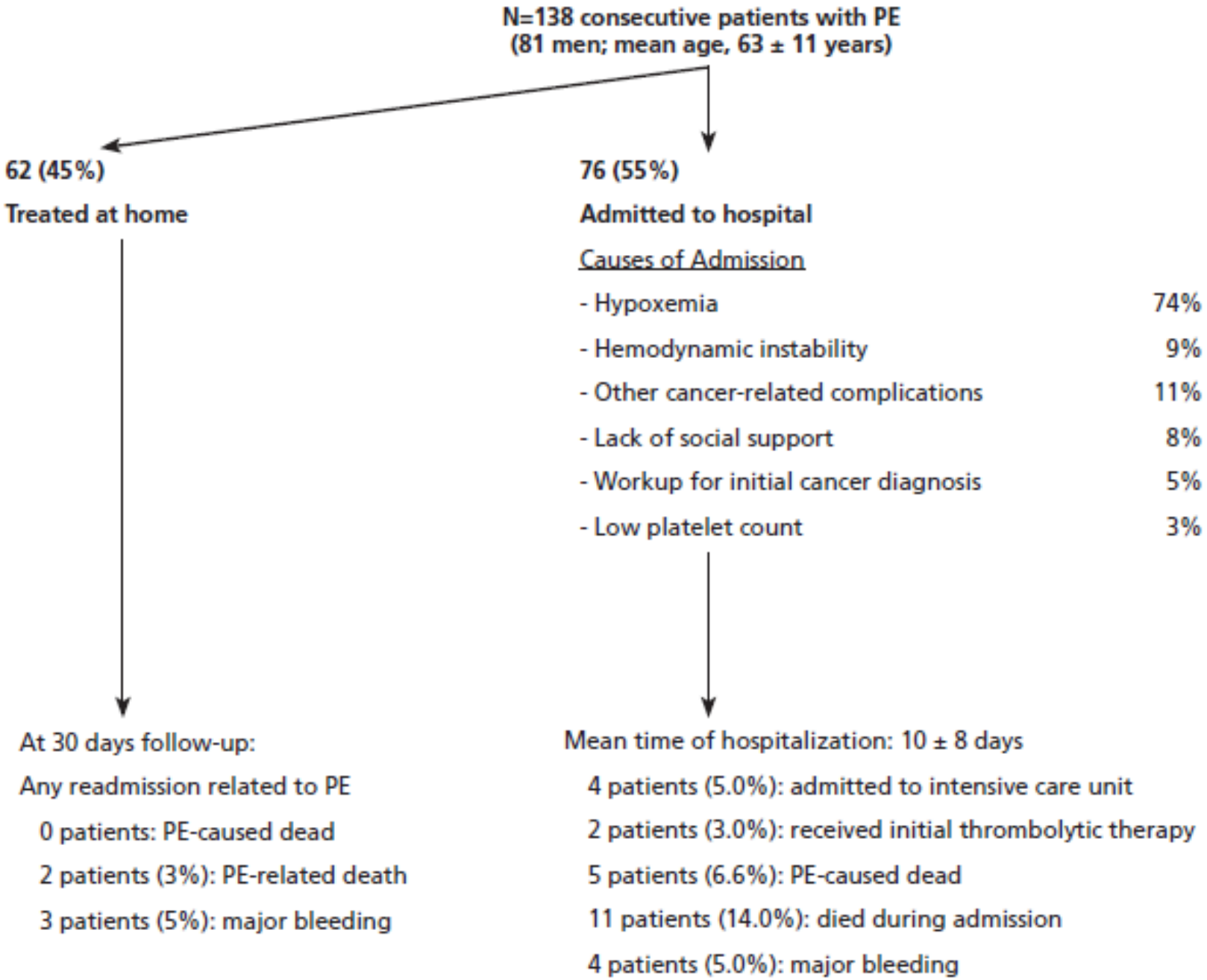

N=138 consecutive patients with PE
(81 men; mean age, 63 ± 11 years)
62 (45%)
Treated at home
76 (55%)
Admitted to hospital
Causes of Admission
- Hypoxemia 74%
- Hemodynamic instability 9%
- Other cancer-related complications 11%
- Lack of social support 8%
- Workup for initial cancer diagnosis 5%
- Low platelet count 3%
At 30 days follow-up:
Any readmission related to PE
0 patients: PE-caused dead
2 patients (3%): PE-related death
3 patients (5%): major bleeding
Mean time of hospitalization: 10 ± 8 days
4 patients (5.0%): admitted to intensive care unit
2 patients (3.0%): received initial thrombolytic therapy
5 patients (6.6%): PE-caused dead
11 patients (14.0%): died during admission
4 patients (5.0%): major bleeding

Table 3 Outcomes According to Treatment Location

Variables	Outpatient n=62 (45%)	Inpatient n=76 (55%)	*P* Value
30 days follow-up			
All-cause mortality	2 (3.2%)	14 (18.4%)	.006
PE-caused death	0	5 (6.6%)	.04
PE-related death	2 (3.2%)	8 (10.5%)	NS
PE-unrelated death	0	1 (1.3%)	NS
Venous rethrombosis	0	2 (2.6%)	NS
Major bleeding	3 (4.8%)	4 (5.3%)	NS
90 days follow-up			
All-cause mortality	6 (9.7%)	26 (34.2%)	.001
PE-caused death	0	5 (6.6%)	.06
PE-related death	3 (4.8%)	17 (22.4%)	.003
PE-unrelated death	3 (4.8%)	3 (3.9%)	NS
Sudden death	0	1 (1.3%)	NS
Venous rethrombosis	1 (1.6%)	4 (5.3%)	NS
Major bleeding	3 (4.8%)	7 (9.2%)	NS

Table 4 Prognostic Values of PESI, POMPE-C, Modified GPS, and RIETE Scales and Exclusion Criteria for 30-Day Mortality

Parameter	PESI (Low vs High Risk)	POMPE-C (I–II vs III–VI)	Modified GPS (<3 vs ≥3)	RIETE (<5, ≥5)	Exclusion Criteria (Home vs Hospital Therapy)
Sensitivity (95% CI)	93.3% (71.7–98.9)	100% (80.6–100)	60.0% (33.2–76.9)	50.0% (24.6–75.3)	87.5% (64.0–96.5)
Specificity (95% CI)	8.1% (3.9–13.4)	12.2% (7.5–19.1)	56.9% (47.7–65.0)	59.0% (49.7–67.8)	49.2% (40.5–57.9)
PPV (95% CI)	11.0% (7.2–18.4)	12.1% (8.1–19.9)	14.5% (7.8–25.3)	13.7% (6.15–25.30)	18.4% (11.3–28.6)
NPV (95% CI)	91.0% (59.6–98.2)	100% (79.6–100)	92.1% (82.2–95.5)	90.0% (81.2–95.5)	96.8% (89.0–99.0)
pLR (95% CI)	1.30 (0.18–9.58)	1.14 (1.07–1.22)	1.29 (0.80–2.09)	1.22 (0.72–2.08)	1.72 (1.33–2.22)
nLR (95% CI)	0.98 (0.85–1.12)	0.00	0.77 (0.43–1.41)	0.85 (0.51–1.41)	0.25 (0.07–0.95)

Modele +
ANCAAN-1205; No. of Pages 5
ARTICLE IN PRESS

ELSEVIER

Disponible en ligne sur
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com

Annales de cardiologie et d'angéiologie

Annales de Cardiologie et d'Angéiologie xxx (2018) xxx–xxx

Article original

Évaluation de la prise en charge des embolies pulmonaires à bas risque diagnostiquée aux urgences. Étude HoPE (Home Treatment of Pulmonary Embolism)

Here, we carry out an evaluation of the professional practices on the emergency management of low-risk PE, after selection with the sPESI score. ThePE of score sPESI at 0 are included, in the absence of contraindications. Ninety-day follow-up is done.

Results. – Eighty PE were diagnosed in 2016, 28 with sPESI score at 0 and 3 patients excluded. **Of the 25 inclusions, 6 patients had signs of right ventricular dysfunction and were therefore hospitalized**. The remaining 19 were eligible for outpatient care but only 8 of them stayed less than 24 hours in the hospital.

The sPESI score is a decision support tool for outpatient management but should not be used alone. The search for right ventricular dysfunction seems important here.

ORIGINAL ARTICLE

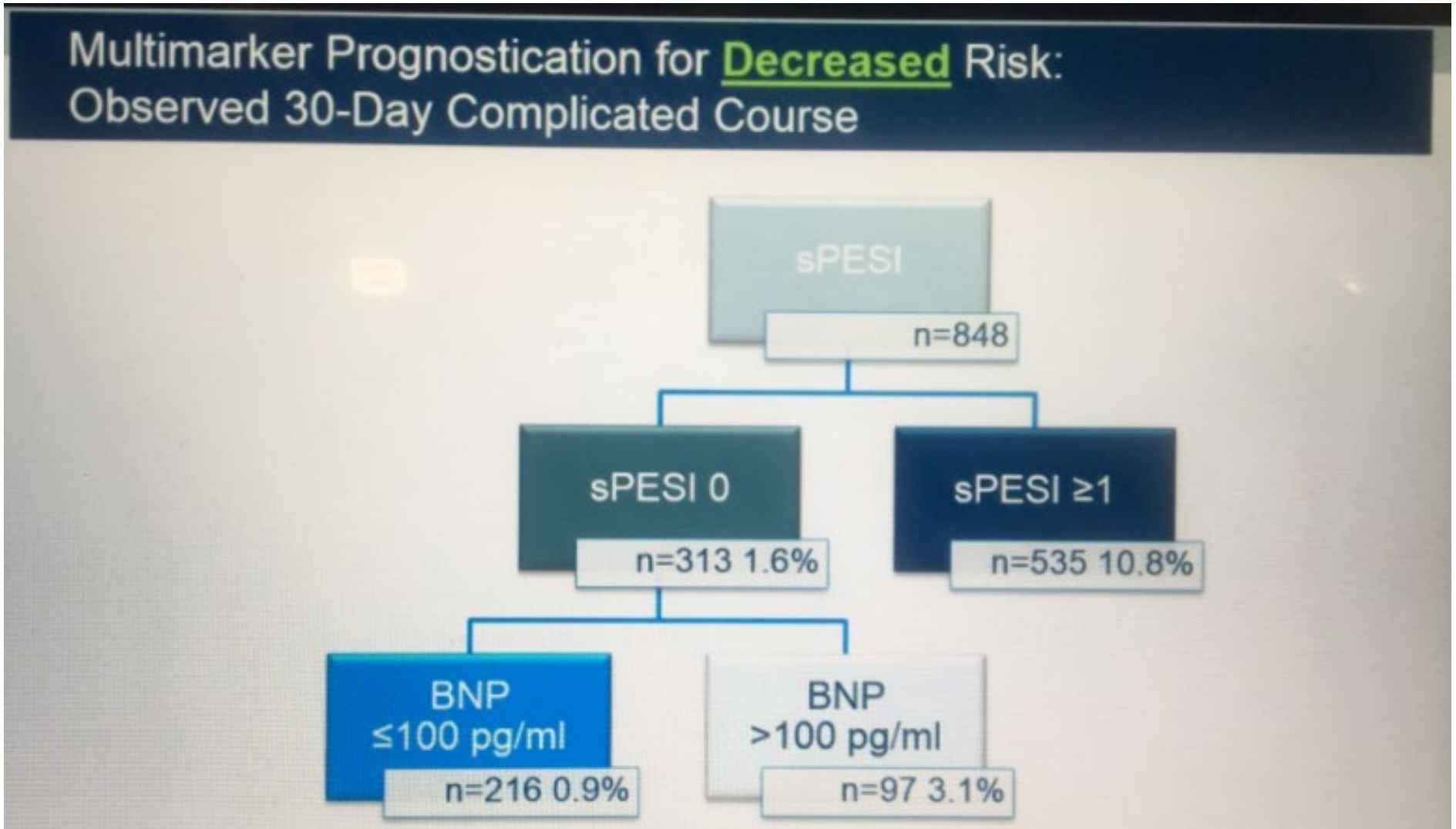
Derivation and Validation of Multimarker Prognostication for Normotensive Patients with Acute Symptomatic Pulmonary Embolism

David Jiménez[1], Dita Kopecna[1], Victor Tapson[2], Beau Briese[3], Donald Schreiber[3], José Luis Lobo[4], Manuel Monreal[5],

American Journal of Respiratory and Critical Care Medicine Volume 189 Number 6 | March 15 2014

Multimarker Prognostication for Increased Risk

Risk factor	Unadjusted OR	95% CI	*p*-value	Adjusted OR	95% CI	*p*-value
Age	1.01	0.99–1.03	0.17	–	–	–
Male gender	0.82	0.49–1.37	0.45	–	–	–
cTnI > 0.05 ng/ml	2.84	1.62–4.98	<0.001	1.96	1.06–3.63	0.03
BNP > 100 pg/ml	3.21	1.80–5.73	<0.001	2.12	1.13–3.99	0.02
RVD echo	2.62	1.54–4.45	<0.001	–	–	–
RVD CT	1.29	0.75–2.24	0.36	–	–	–
DVT on CCUS	1.84	1.08–3.12	0.02	2.08	1.19–3.65	0.01
sPESI >0	7.49	2.97–18.88	<0.001	5.62	2.19–14.45	<0.001
Dyspnoea	2.05	0.92–4.59	0.08	–	–	–
Chest pain	0.73	0.43–1.23	0.24	–	–	–
Syncope	0.93	0.45–1.93	0.85	–	–	–
Immobile	2.02	1.15–3.53	0.01	–	–	–
Recent surgery	0.56	0.20–1.57	0.27	–	–	–


Multimarker Prognostication for Decreased Risk:
Observed 30-Day Complicated Course
sPESI
n=848
sPESI 0
n=313 1.6%
sPESI ≥1
n=535 10.8%
BNP
≤100 pg/ml
n=216 0.9%
BNP
>100 pg/ml
n=97 3.1%

British Thoracic Society Guideline for the initial outpatient management of pulmonary embolism (PE)

Luke S G E Howard,[1] Steven Barden,[2] Robin Condliffe,[3] Vincent Connolly,[4] Christopher W H Davies,[5] James Donaldson,[6] Bernard Everett,[7] Catherine Free,[8] Daniel Horner,[9,10] Laura Hunter,[11] Jasvinder Kaler,[12] Catherine Nelson-Piercy,[13] Emma O'Dowd,[14] Raj Patel,[15] Wendy Preston,[16] Karen Sheares,[17] Campbell Tait[18]

Howard LSGE, *et al*. *Thorax* 2018;**73**:ii1–ii29. doi:10.1136/thoraxjnl-2018-211539

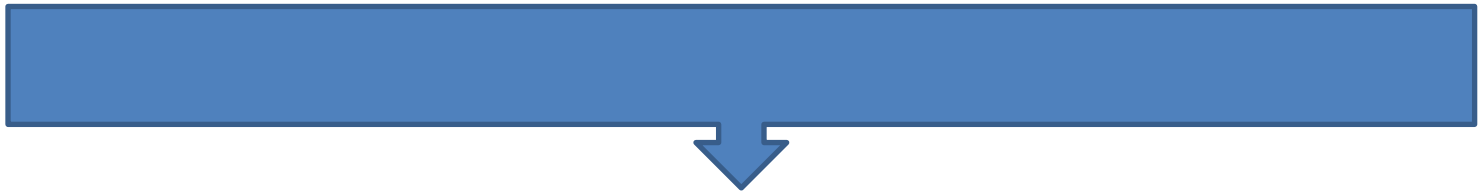
PULMONER EMBOLİ HASTALARININ **%37-44** Ü AYAKTAN TEDAVİ İÇİN UYGUN OLDUĞU SAPTANMIŞ.

- Pulmonary Embolism Severity Index (PESI) class I/II,
- sPESI 0 veya
- Hestia 0 kriterlerini taşıyorsa ayaktan tedavi açısından hasta değerlendirilmelidir. (Grade B)
- PESI veya sPESI düşük riskli ise, hastanın evde tedavisi için dışlama kriterleri kullanılmalıdır (Grade B).

Dışlama kriterleri

- Nb>110, sistolik KB<100 mmHg, inotrop gerekiyorsa, trombolitik veya embolektomi gerekiyor ise
- Oda havasında spo2<90
- Aktif kanama veya majör kanama riski
- Tam doz antikoagülan alıyorken emboli oluşması
- Opioid gerektiren ciddi ağrı
- Hastane yatışı gerektiren diğer komorbiditeler

- KBY (GFR<30)
- Son 1 yıl içinde HIT gelişmiş ise
- Evde bakımı sosyal nedenlerle uygun değil ise



EVDE TEDAVİ PLANLANABİLİR (PESI ve Spesı düşük risk olmalı) (Grade B)

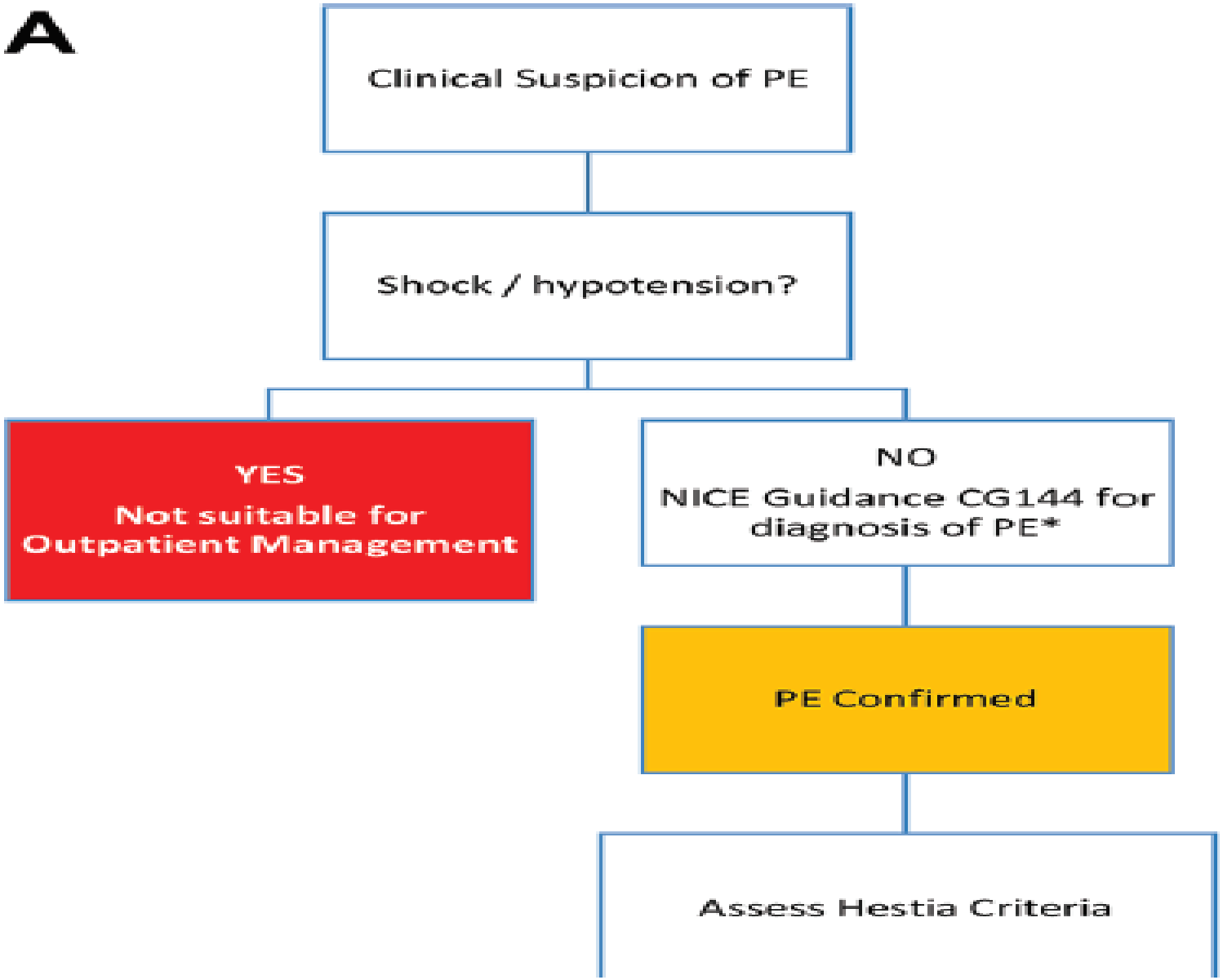
- BT de sağ ventrikül/sol ventrikül oranın değerlendirilmesi veya EKO ile değerlendirme düşük risk hastaların ayaktan tedavisinin yapılması için gerekli değildir (Grade C).
- Fakat düşük riskli ayaktan tedavi edilecek hastalarda BT de veya EKO da sağ ventriküler dilatasyon saptanmış ise BNP, nt-BNP, Troponin I ve T ölçülmelidir.
- Normal değerler düşük risk olarak değerlendirmeye devam edilmeli, yüksek çıktığında ise hastaların yatırılarak tedavi edilmesi gerekmektedir (Grade C).

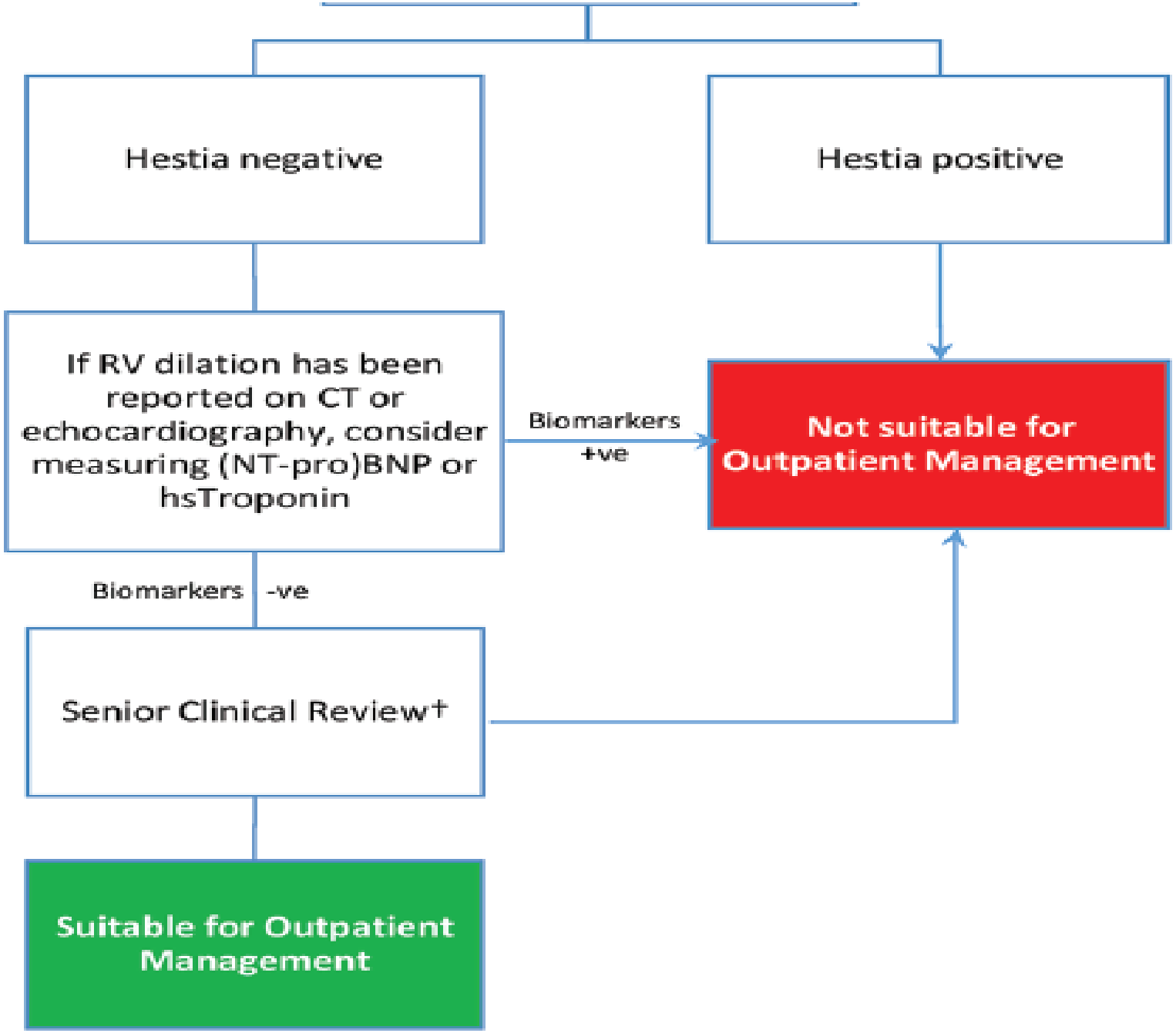
- PE tanısı alan hastalar DMAH+dabigatran, DMAH+ Edoxaban veya apixaban – rivaroksaban gibi bir tekli rejimle tedavi edilmelidir (Grade A).

- PESI 3 olan hastalar yatışlarından sonra erken taburculuk için aralıklı değerlendirilmeli ve PESI 1-2 olduğunda veya sPESI 0 olduğunda taburculuk planlanmalıdır (Grade C).

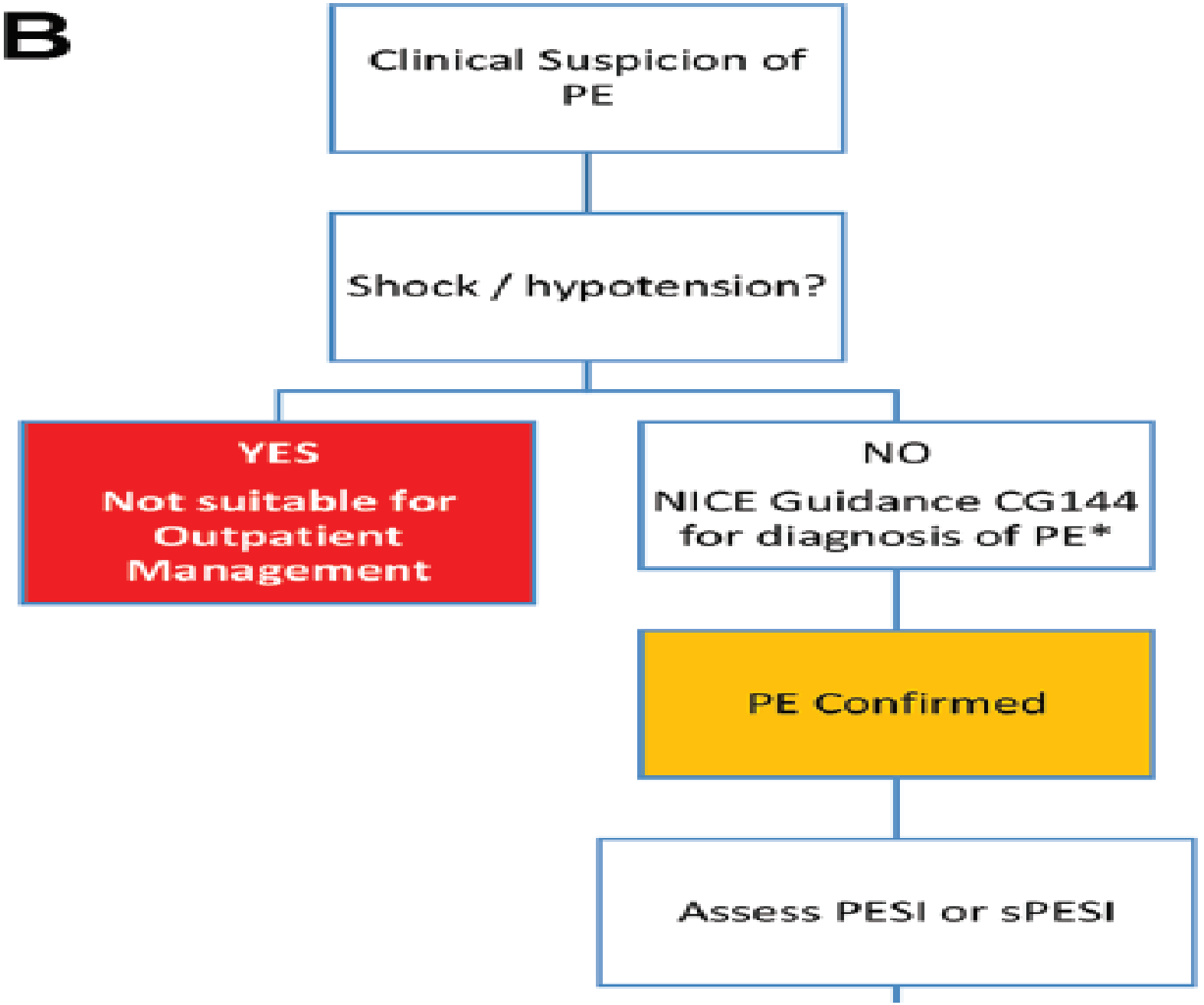
- KANSER hastalarında ayaktan tedavinin planlanması için HESTIA kriterleri kullanılmalıdır (Grade D)

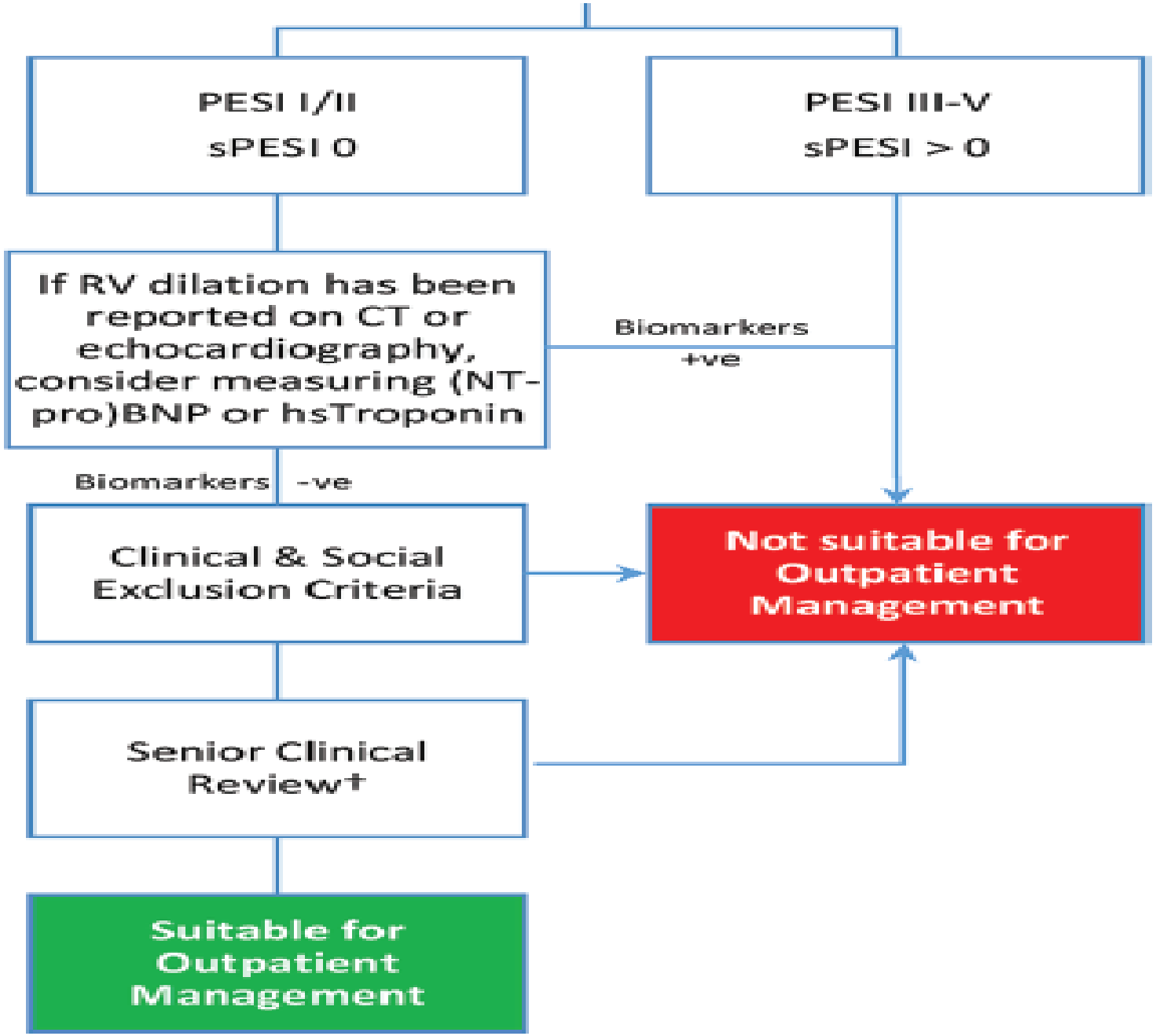
A


Clinical Suspicion of PE
Shock / hypotension?
YES
Not suitable for Outpatient Management
NO
NICE Guidance CG144 for diagnosis of PE*
PE Confirmed
Assess Hestia Criteria


Hestia negative
Hestia positive
If RV dilation has been reported on CT or echocardiography, consider measuring (NT-pro)BNP or hsTroponin
Biomarkers +ve
Not suitable for Outpatient Management
Biomarkers -ve
Senior Clinical Review†
Suitable for Outpatient Management

B


Clinical Suspicion of PE
Shock / hypotension?
YES
Not suitable for Outpatient Management
NO
NICE Guidance CG144 for diagnosis of PE*
PE Confirmed
Assess PESI or sPESI


PESI I/II
sPESI 0
PESI III-V
sPESI > 0
If RV dilation has been reported on CT or echocardiography, consider measuring (NT-pro)BNP or hsTroponin
Biomarkers +ve
Biomarkers -ve
Clinical & Social Exclusion Criteria
Not suitable for Outpatient Management
Senior Clinical Review†
Suitable for Outpatient Management

- ►Evde tedavi planlanan kişiler kanama-nüks konusunda sözlü ve yazılı olarak bilgilendirilmelidir.
- ► Hastalar 1 hafta sonra tedavi durumu ve komplikasyonların değerlendirilmesi açısından telefon veya yüz yüze görüşülmelidir (Grade B)

Home treatment of patients with low-risk pulmonary embolism with the oral factor Xa inhibitor rivaroxaban

Rationale and design of the HoT-PE Trial

Thromb Haemost 2016; 116: 191–197

Summary

Pulmonary embolism (PE) is a potentially life-threatening acute cardiovascular syndrome. However, more than 95 % of patients are haemodynamically stable at presentation, and among them are patients at truly low risk who may qualify for immediate or early discharge. The Home Treatment of Pulmonary Embolism (HoT-PE) study is a prospective international multicentre single-arm phase 4 management (cohort) trial aiming to determine whether home treatment of acute low-risk PE with the oral factor Xa inhibitor rivaroxaban is feasible, effective, and safe. Patients with confirmed PE, who have no right ventricular dysfunction or free floating thrombi in the right atrium or ventricle, are eligible if they meet none of the exclusion criteria indicating haemodynamic instability, serious comorbidity or any condition mandating hospitalisation, or a familial/social environment unable to support home treatment. The first dose of rivaroxaban is given in hospital, and patients are discharged within 48 hours of presentation. Rivaroxaban is taken for at least three months. The primary outcome is symptomatic recurrent venous thromboembolism or PE-related death within three months of enrolment. Secondary outcomes include quality of life and patient satisfaction, and health care resource utilisation compared to existing data on standard-duration hospital treatment. HoT-PE is planned to analyse 1,050 enrolled patients, providing 80 % power to reject the null hypothesis that the recurrence rate of venous thromboembolism is >3 % with $\alpha \leq 0.05$. If the hypothesis of HoT-PE is confirmed, early discharge and out-of-hospital treatment may become an attractive, potentially cost-saving option for a significant proportion of patients with acute PE.

Keywords

Pulmonary embolism, home treatment, management trial, rivaroxaban, risk stratification

Inclusion criteria	Exclusion criteria
1) Age ≥18 years 2) Objectively confirmed diagnosis of acute PE by multidetector CT, V/Q lung scan, or selective pulmonary angiography, according to established diagnostic criteria, with or without symptomatic DVT 3) Absence of RV enlargement or dysfunction, and of free floating thrombi in the right atrium or right ventricle on echocardiography or CT On echocardiography, RV dysfunction is absent when both of the following criteria listed below are met: (i) right/left ventricular end-diastolic diameter ratio ≤0.9 (apical or subcostal 4-chamber view); (ii) no paradoxical motion of the interventricular septum; On CT, RV enlargement is absent when the following criterion is met: right/left short-axis diameter ratio <0.9 (transverse plane) 4) Ability of subject to understand the character and consequences of a clinical trial 5) For women of childbearing potential, negative pregnancy test before enrolment and medically accepted contraception throughout the trial 6) Signed and dated informed consent of the subject available before the start of any trial procedures	1) Haemodynamic instability at presentation* 2) Use of a fibrinolytic agent, surgical thrombectomy, interventional (transcatheter) thrombus aspiration or lysis, or use of a cava filter to treat the index episode of PE 3) Active bleeding or known significant bleeding risk 4) Need for supplemental oxygen administration to maintain oxygen saturation >90 % 5) Chronic treatment with a vitamin K antagonist, rivaroxaban or any other oral or parenteral anticoagulant drug 6) Pain requiring parenteral administration of analgesic agents 7) Other medical conditions/comorbidities requiring hospitalisation 8) Acute PE diagnosed in a patient already hospitalized for another condition 9) Non-compliance or inability to adhere to treatment or to the follow-up visits; or lack of a family environment or support system for home treatment 10) Severe renal insufficiency (eGFR <15 ml/min/1.73 m^2 by the MDRD formula), or end-stage renal disease 11) Severe hepatic failure 12) Pregnancy or lactation 13) History of hypersensitivity to the study drug 14 Treatment of the acute (index) episode with unfractionated heparin, low-molecular-weight heparin, fondaparinux, or a new oral anticoagulant for more than 48 hours, or with more than a single dose of a vitamin K antagonist prior to inclusion in the study 15) Concomitant administration of strong inhibitors of P-gp and CYP3A4 such as azole antimycotic agents or HIV protease inhibitors 16) Need for long-term treatment vitamin K antagonists, or for antiplatelet agents except acetylsalicylic acid at a dosage ≤100 mg/day 17) Participation in other clinical trials within the last six months 18) Medical or psychological condition that would not permit completion of the trial or signing of informed consent 19) Life expectancy less than 3 months

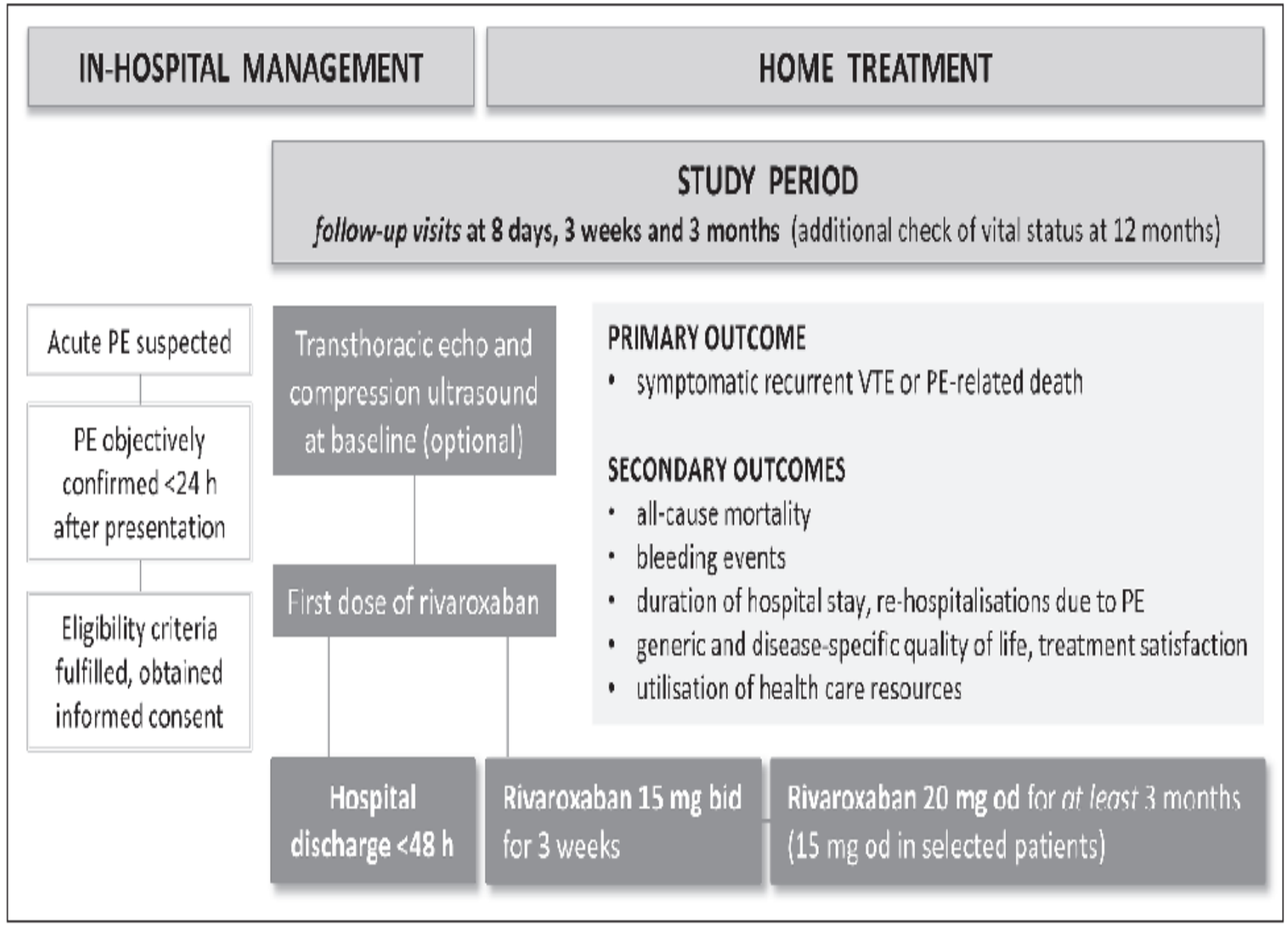


Figure 1: Study design. VTE, venous thromboembolism; PE, pulmonary embolism; od, once daily; bid, twice daily.

ULUSAL AKCİĞER SAĞLIĞI KONGRESİ 2019

Sizin Sesiniz, Sizin Kongreniz...

13-17 MART 2019

Sueno Hotel

Belek/Antalya

ASYOD

AKAD

Anasayfa | Kurullar | Bilimsel Program | Kurslar | Atölye Çalışmaları | Asistan Odaları | Bildiri Gönderimi | Sosyal Program | Kongre Ödülleri ve Burslar | Kayıt & Konaklama | İletişim | English