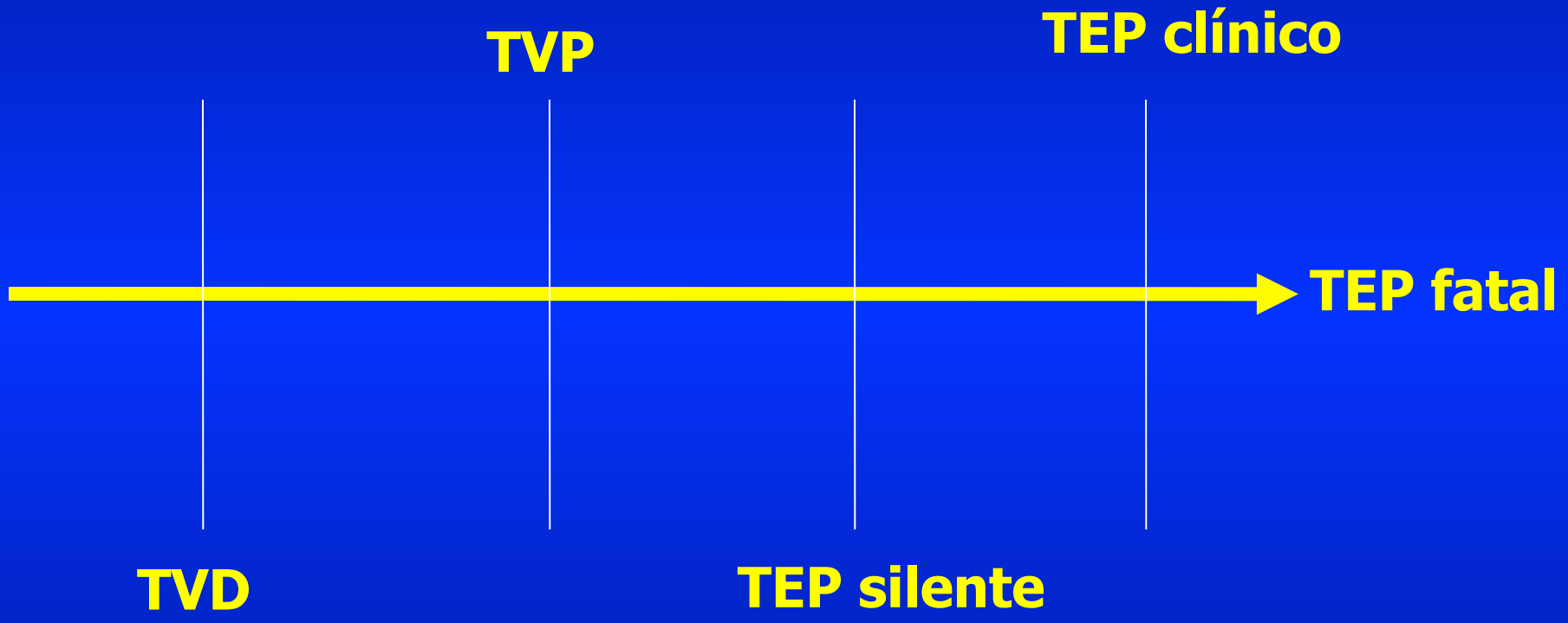
Tromboembolismo Venoso (TEV)
Diagnóstico y Tratamiento

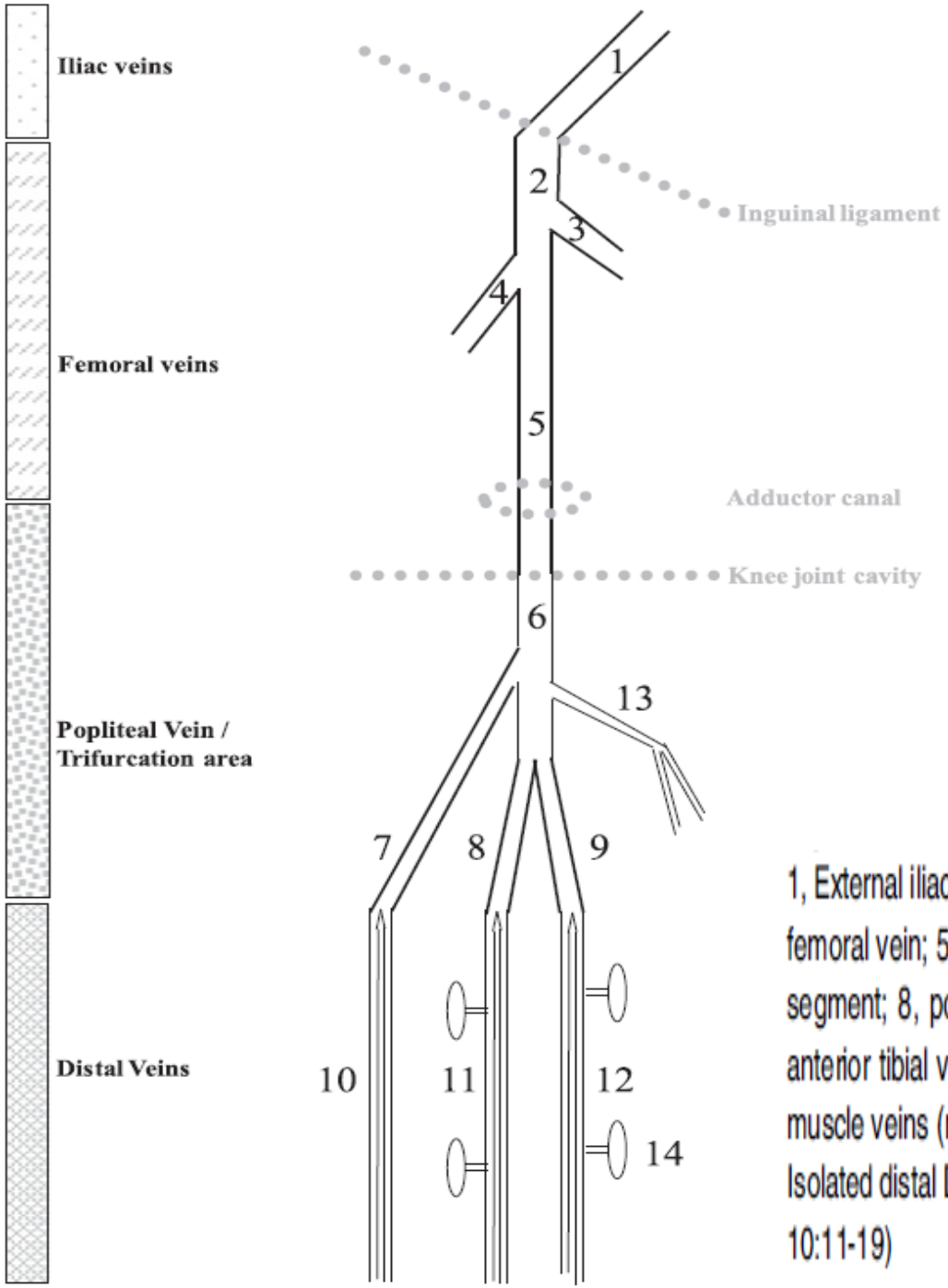
Dardo Riveros
Sección Hematología
Departamento de Medicina Interna

El TEV como un Proceso con Distintas Expresiones



TVD: trombosis venosa distal
TVP: trombosis venosa proximal
TEP: tromboembolismo pulmonar

Venas de la Pierna
Representación Esquemática



1, External iliac vein; 2, common femoral vein; 3, greater saphenous vein; 4, profound femoral vein; 5, (superficial) femoral vein; 6, popliteal vein; 7, anterior tibial confluent segment; 8, posterior tibial confluent segment; 9, peroneal confluent segment; 10, anterior tibial veins; 11, posterior tibial veins; 12, peroneal veins; 13, gastrocnemius muscle veins (medial head); 14, soleus muscle veins. (From Palareti G, Schellong S. Isolated distal DVT: what we know and what we are doing. *J Thromb Haemost.* 2012; 10:11-19)

Epidemiología

- **Incidencia :** **100-270 /100.000/año**
- **Mortalidad en internación:** **30 %**
- **Recurrencia a los 10 años:** **30 %**
- **Síndrome post- trombótico:** **40 % a los 20 años**
- **Incidencia de hipertensión pulmonar sintomática:** **4% a los 2 años**

Mortalidad por TEV en internación

- 25000 muertes al año (25 veces más que por *S. aureus MR* y más que la combinación de muertes por SIDA, cáncer de mama y accidentes de tránsito.
- 8 c/1000 cirugías
- Heparina salva 7 vidas c/ 1000 cirugías

- **On 19 April 2007, Government announced national VTE strategy, which will require mandatory risk-assessment and prophylaxis in UK hospitals**

Venous thromboembolism caused 25 000 deaths a year, say MPs

Rebecca Coombes London

Blood clots that develop while patients are in hospital cause deaths on a far larger scale than does methicillin resistant *Staphylococcus aureus* (MRSA), but the extent of the problem is largely unrecognised by doctors, MPs said this week.

In a critical report on the prevention of venous thromboembolism, the health select committee said the condition killed more than 25 000 patients in England each year, more than the combined deaths from breast cancer, AIDS, and road traffic injuries and more than 25 times the number of deaths from MRSA.

However, although many of the deaths from venous thromboembolism are preventable through cheap and effective drug treatment, problems often do not occur until after discharge from hospital, and so physicians and surgeons are left unaware of the problem.

part or all of the clot breaks off and travels through the venous system. In the United Kingdom, pulmonary embolism after deep vein thrombosis is the immediate cause of death of a tenth of all patients who die in hospital.

The MPs' report cited a study of over 4000 patients who died of pulmonary embolism after major surgery; the study showed that the use of perioperative low dose heparin saved seven lives per 1000 patients operated on. The death rate is currently eight per 1000 operated on.

Despite the scale of the problem, doctors will have to wait until May 2007 for clinical guidelines on preventive measures from the National Institute for Clinical Excellence. These guidelines will apply only to surgical patients at high risk of venous thromboembolism.

The select committee condemned this response as "remarkably tardy." It said: "Moreover, the

BMJ VOLUME 330 12 MARCH 2005

Recomendaciones para Profilaxis del TEV

Nivel	Riesgo (%)	Tromboprofilaxis
Bajo Cirugía menor sin factores de riesgo. No quirúrgicos (activos)	<10	*Ambulación precoz*
Moderado Cirugía mayor No quirúrgicos (en reposo)	30	*HBPM, HNF x 2* *fondaparinux*
Alto-Muy alto Ortopedia-Oncología Trauma-Trombofilia	40-80	*HBPM, HNF x 3* *Fondaparinux, anti-vit.K* *AAS* *Anticoagulantes orales directos (AODs)*

Tromboembolismo Venoso (TEV)
Diagnóstico

1- Probabilidad clínica pre-test

2- Dímero-D

3- Técnicas de imágenes

Modelo para Trombosis Venosa Profunda (TVP)

Condición clínica	Puntaje
- Trombosis venosa profunda previa	1
- Parálisis, paresia o yeso en MMII	1
- Inmovilización reciente > 3 días o cirugía mayor en las últimas 12 semanas	1
- Tumefacción / dolor a lo largo trayecto venoso	1
- Pierna entera edematizada	1
- Pantorrilla edematizada (> 3cm)	1
- Edema con godet en pierna comprometida	1
- Dilatación venosa no varicosa	1
- Diagnóstico alternativo	- 2

- 2 o > : TVP probable
- 0, 1 o 2 : TVP poco probable

Wells PS, y col. N Engl J Med 2003

Metodología Diagnóstica para TVP

TVP Poco Probable

↓ – → *Dímero –D excluye TEP**

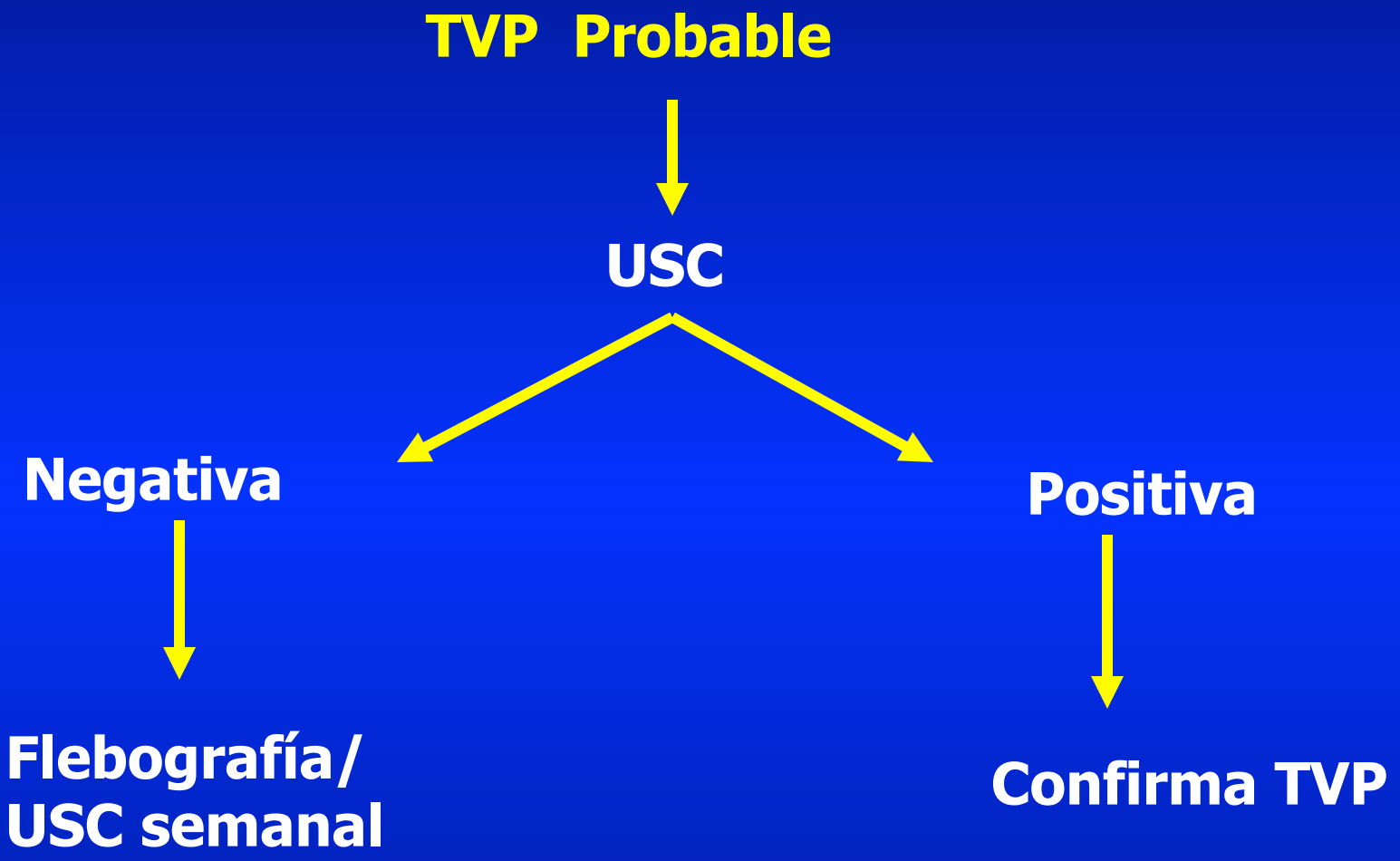
Ultrasonografía por compresión (USC)

Negativa → **Excluye TVP**

Positiva → **Confirma TVP**

** Test de dímero-D ajustado a edad (Righini M, y col. JAMA 2014)*

Metodología Diagnóstica para TVP



Tromboembolismo de Pulmón (TEP)

Regla de decisión clínica dicotomizada

Variable	Puntaje
Signos clínicos y síntomas de TVP	3.0
Baja probabilidad de diagnóstico alternativo	3.0
Frecuencia cardíaca mayor de 100/min	1.5
Inmovilización > de 3 días o cirugía en las 4 semanas previas	1.5
TEV previo	1.5
Hemoptisis	1.0
Neoplasia en tratamiento	1.0

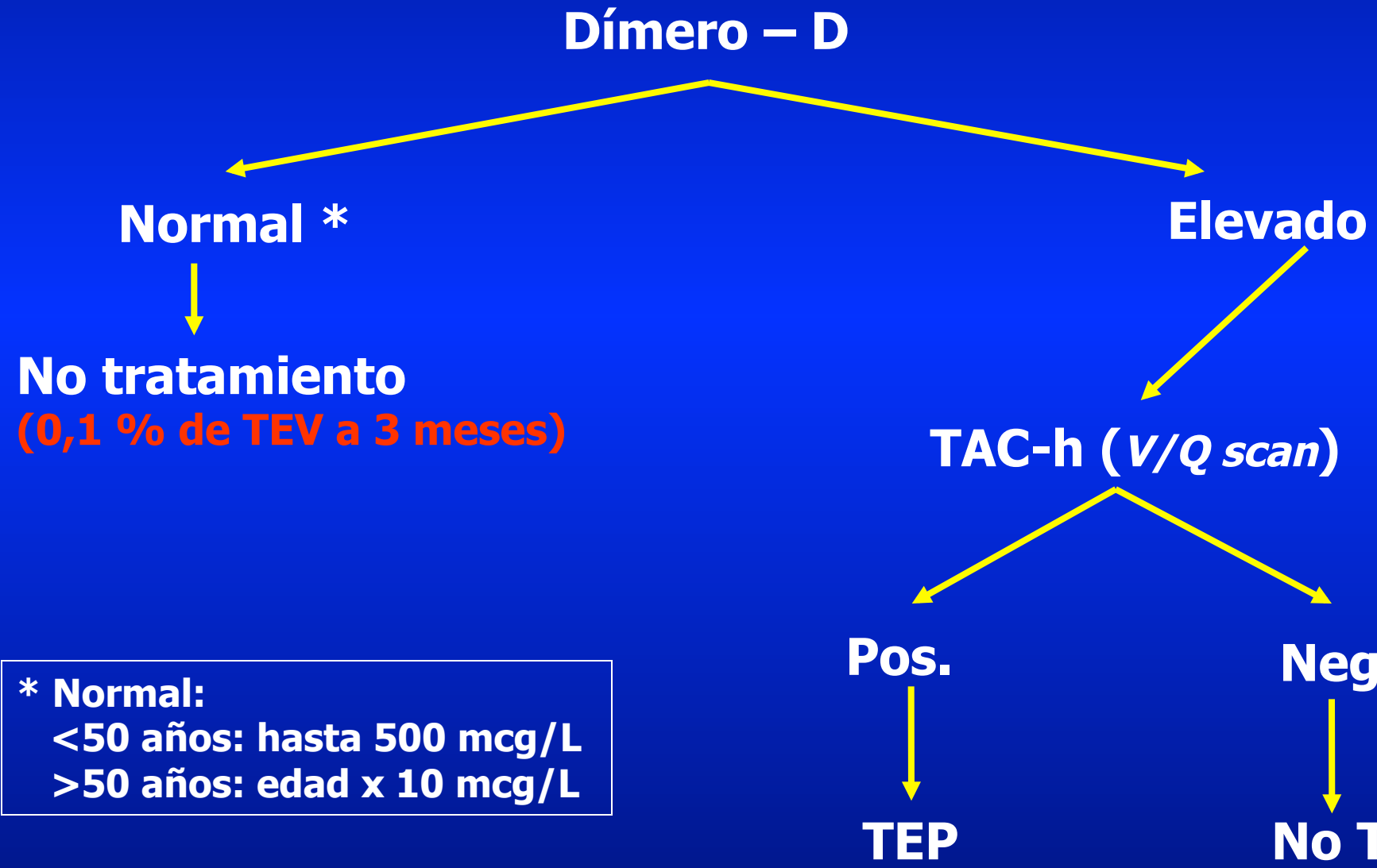
TEP poco probable: ≤ 4 puntos (10% de probabilidad)

TEP probable : ≥5 puntos (40-70%)

Wells PS, y col. Thromb Haemost.

Enfermos sin Inestabilidad Hemodinámica

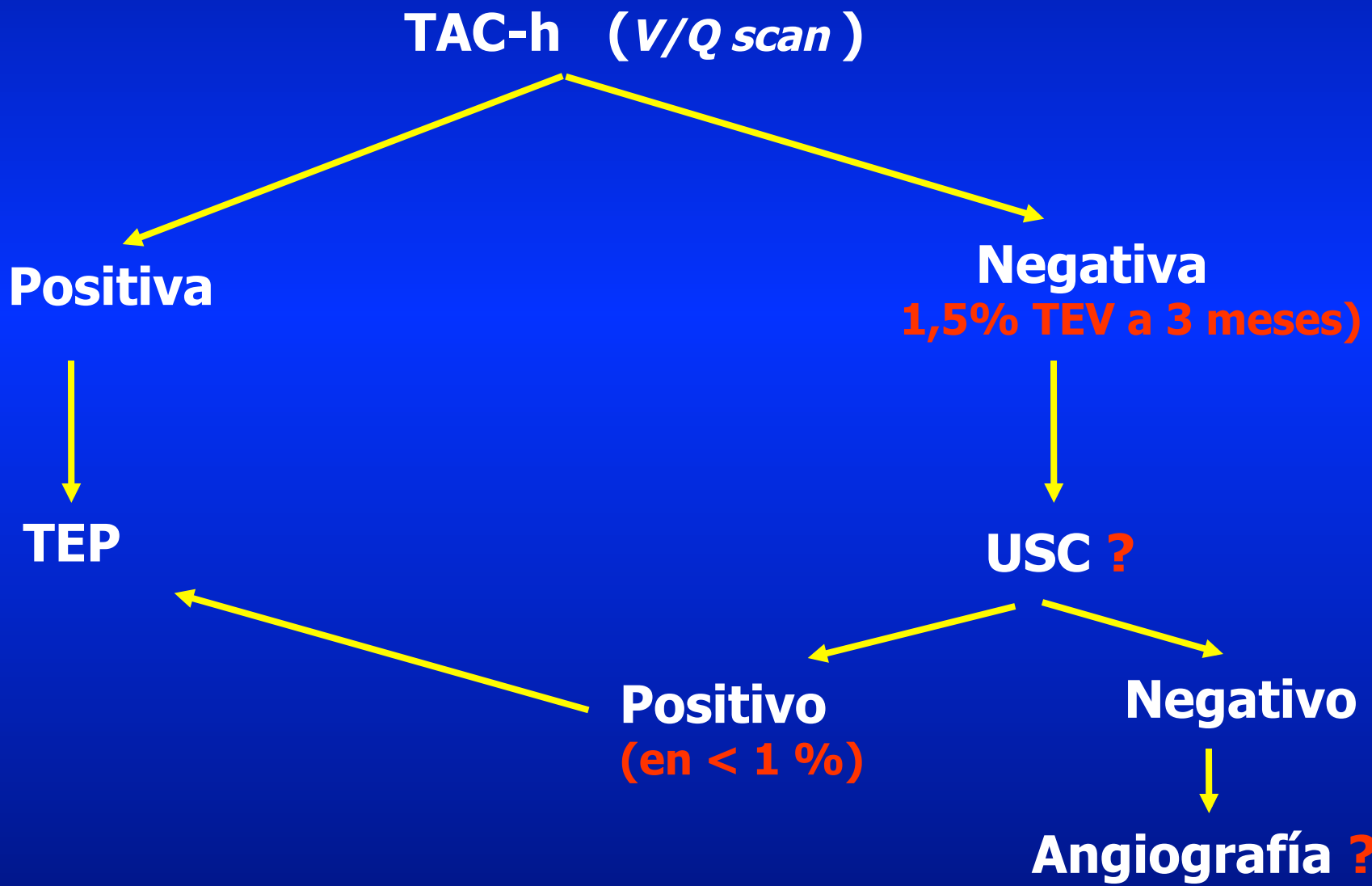
TEP Poco Probable (Wells dicotomizado)



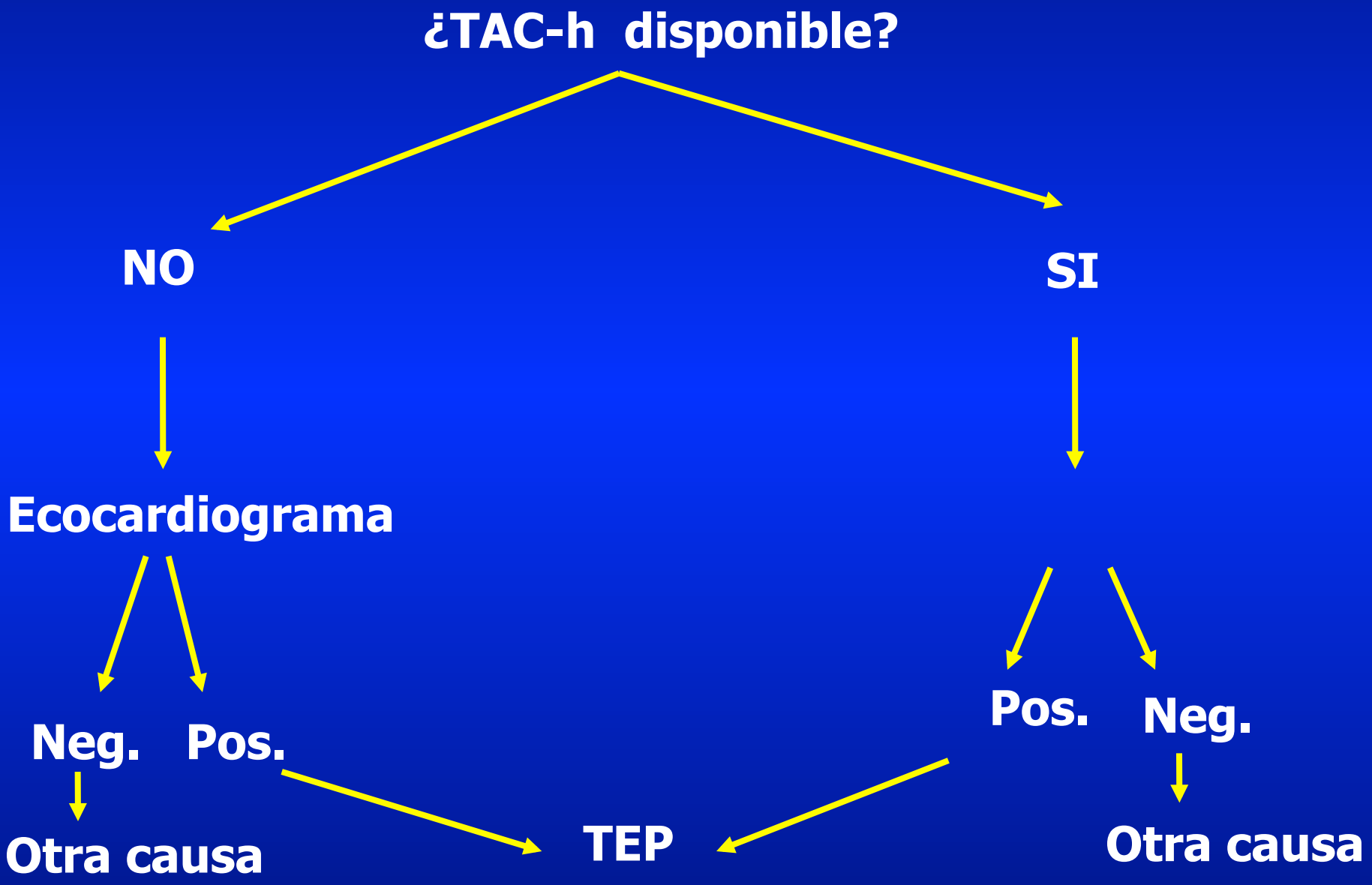
* Normal:
<50 años: hasta 500 mcg/L
>50 años: edad x 10 mcg/L

Enfermos sin Inestabilidad Hemodinámica

TEP Probable (Wells dicotomizado)



Enfermos con Inestabilidad Hemodinámica



blood advances

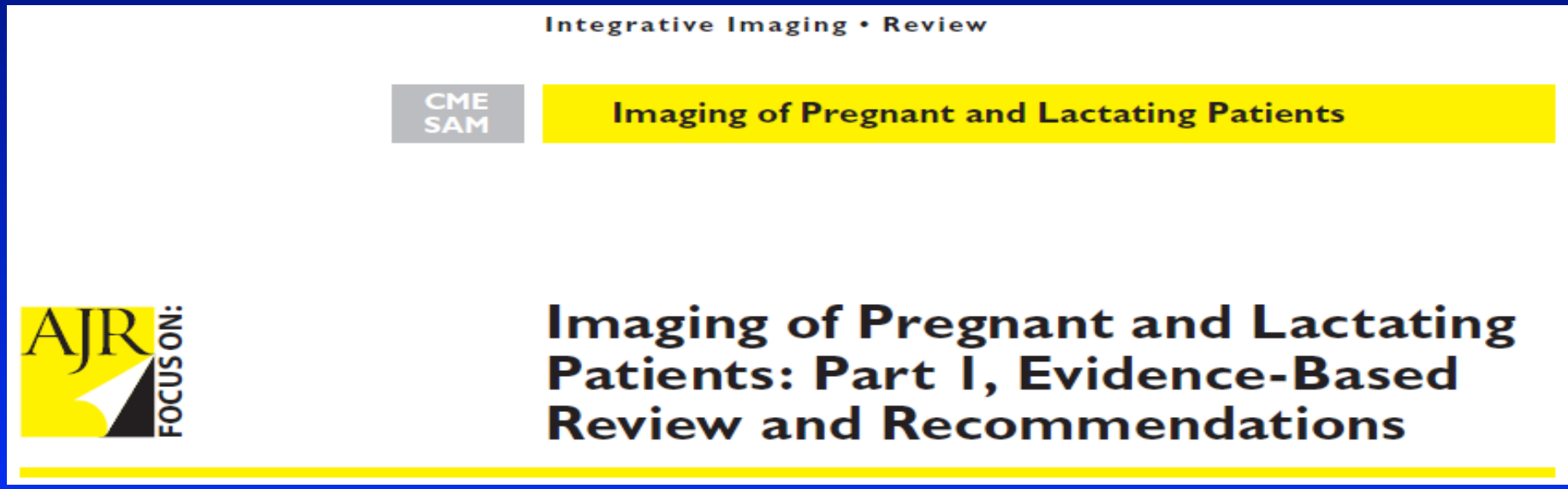
American Society of Hematology 2018 guidelines for management of venous thromboembolism: venous thromboembolism in the context of pregnancy

Diagnosis of VTE

Recommendation 30. For pregnant women with suspected pulmonary embolism, the ASH guideline panel *suggests* ventilation-perfusion (V/Q) lung scanning over computed tomography (CT) pulmonary angiography (conditional recommendation, low certainty in evidence about effects ⊕⊕◯◯).

Recommendation 31. For pregnant women with suspected DVT, the ASH guideline panel *suggests* additional investigations, including serial compression ultrasound or magnetic resonance venography compared with no further investigations after an initial negative ultrasound with imaging of the iliac veins (conditional recommendation, low certainty in evidence about effects ⊕⊕◯◯).

Bates SM, y col. Blood 2019

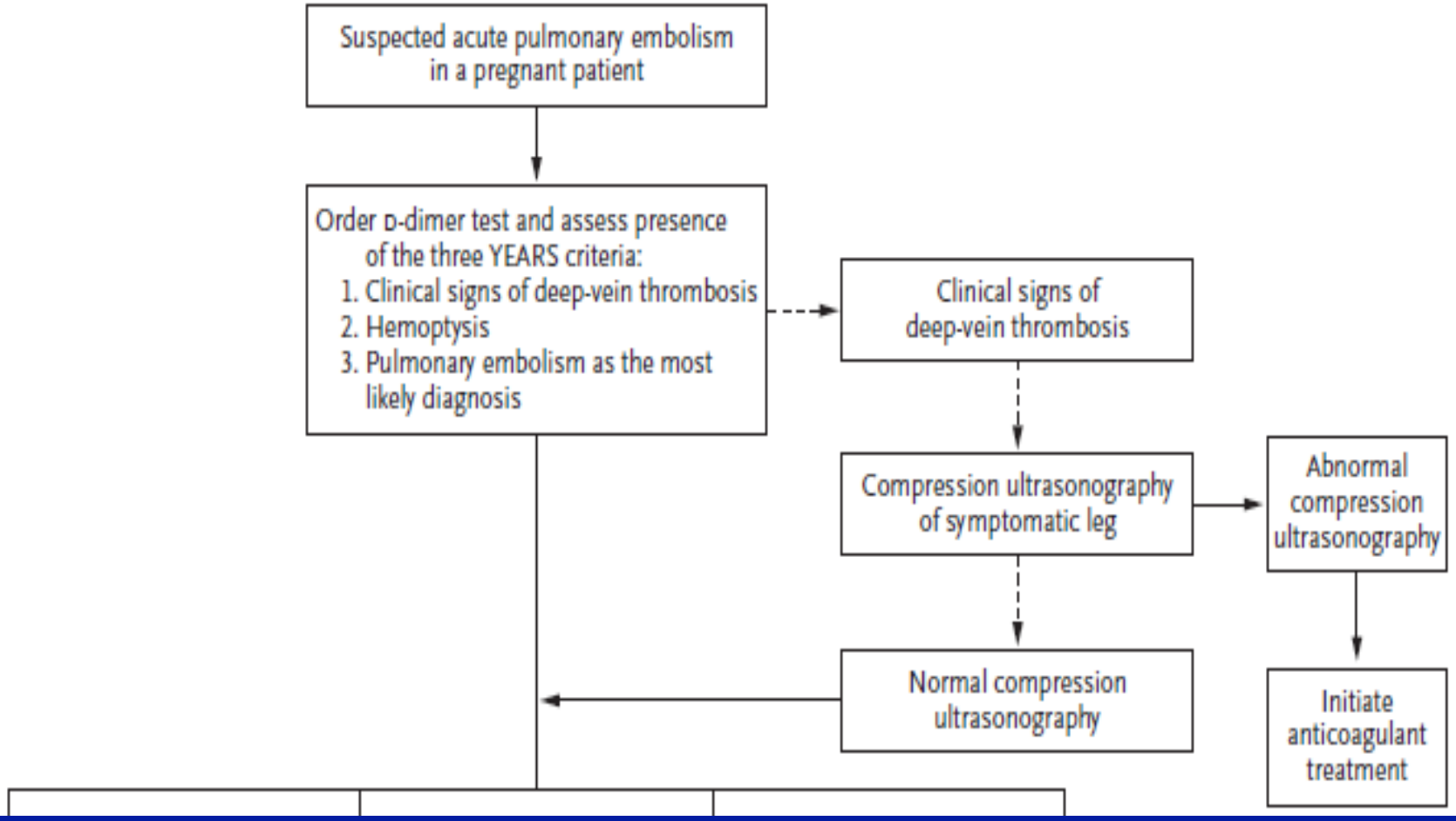


Conclusiones para exposición fetal

- **Toxicidad determinística con > 100 mSv (10 rads=0,1 Gy)**
- **Los métodos diagnósticos habituales están debajo de ese nivel (TAC tórax = 0,2 mSv. Es algo > con scan V/Q). El problema radicaría en la acumulación o repetición**
- **Toxicidad estocástica : sin umbral de exposición fetal, pero 10-50 mSv (p.ej. TAC tórax +abdomen+pelvis con contraste) duplica el riesgo de leucemia**

ORIGINAL ARTICLE

Pregnancy-Adapted YEARS Algorithm for Diagnosis of Suspected Pulmonary Embolism



van der Pol LM, et al. N Eng J Med 2019

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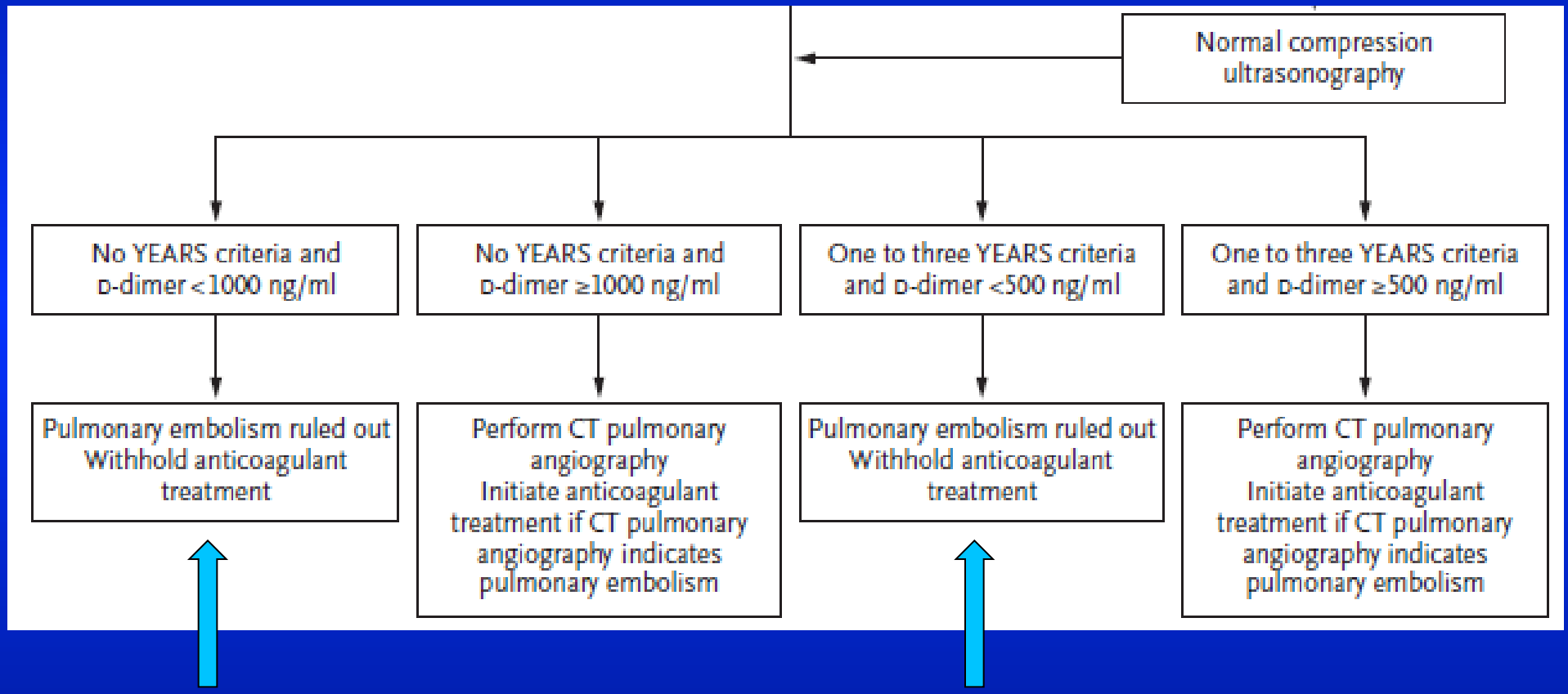
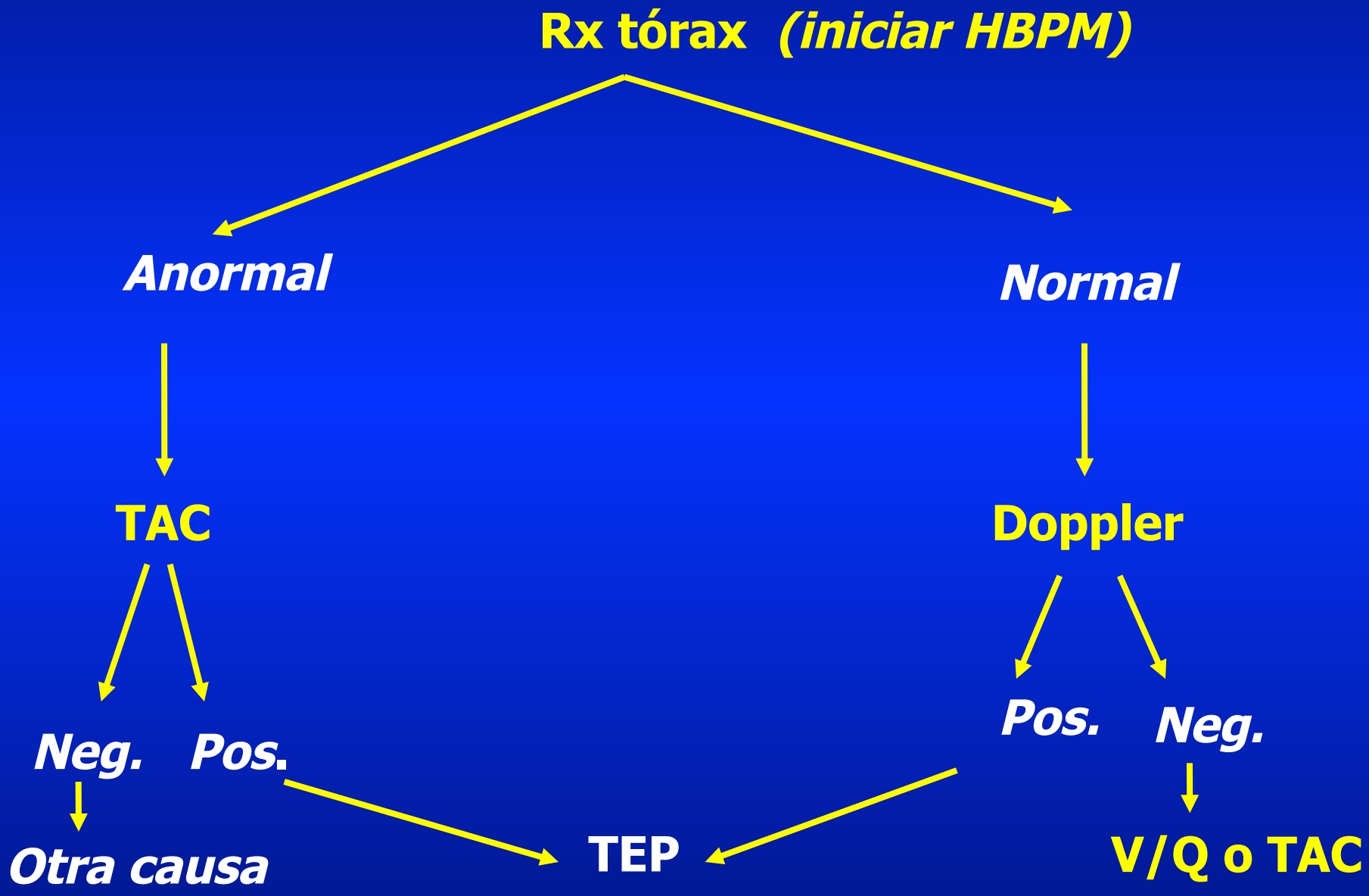


TC evitada : 65% en primer trimestre y 32% en el tercero

van der Pol LM, et al. N Eng J Med 2019

Metodología Diagnóstica para TEP en Embarazo



Tratamiento del TEV

- **Fases del tratamiento**
  Aguda: hasta días 5- 10
  Prolongada: primeros 3 meses
  Extendida con tope: 6-12-24 meses
  Extendida sin tope: "indefinida"

- **¿Internado o en su casa?**

- **¿Anticoagulación, trombolisis o filtro?**

- **Elección del agente y duración del tratamiento**

- **Prevención del síndrome postrombótico**

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PESI Simplificado (PESIs)

Edad > de 80 años

Neoplasia (antecedente o activa)

Cardiopatía o EPOC o nefropatía o enf. cerebrovascular

Frecuencia cardíaca >110/min

Presión arterial sistólica <100 mm Hg

Saturación de oxígeno arterial <90%

Cada factor = 1 punto
Score 0 puede ser tratado en forma ambulatoria

Jimenez D, y col. Arch Intern Med 2010

Tratamiento del TEV

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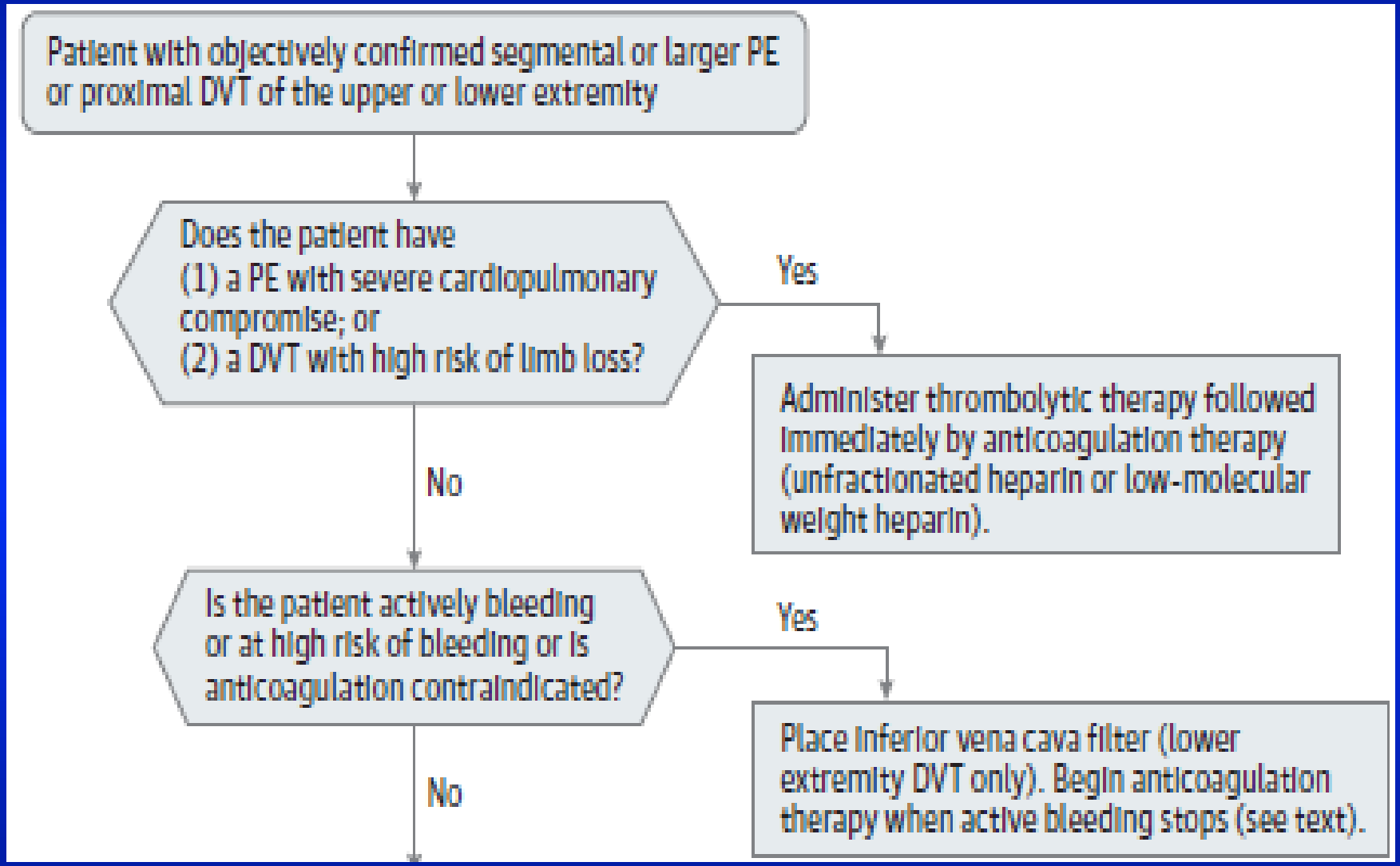
Tratamiento Inicial sin Anticoagulación



Wells PS, y col. JAMA 2014;311(7):717-728

Trombolisis vs HNF en TEP

- **Un meta-análisis demostró que la trombolisis endovenosa redujo la mortalidad y el TEP recurrente entre los enfermos hemodinámicamente inestables cuando se la comparó con la HNF (9,4% vs 19%)**

Contraindicaciones: HTA no controlada, hemorragia cerebral y trauma o cirugía mayor en las 3 semanas previas.

Wan S, y col. Circulation 2004

Trombolisis en Tratamiento Inicial del TEP

TEP masivo o sub- masivo con falla hemodinámica

Fármacos

-Estreptoquinasa: 250.000U EV en 30 min y luego 100.000 U / hora por 24 hs

-Uroquinasa: 4.400 U / kg EV en 10 min y luego 4.400 U / Kg / hora por 12 horas

-Alteplase: -10 mg en bolo EV y 90 mg en infusión de 2 horas

- 50 mg EV en 15 minutos en casos con de falla cardiorespiratoria

Trombolisis en Tratamiento Inicial de la TVP

- Puede mejorar el síndrome postrombótico a costa de mayor sangrado
- No reduce riesgo de recurrencia, TEP ni muerte
- Se recomienda en casos con compromiso arterial
- La modalidad guiada por catéter puede ser mejor en casos de localización iliofemoral, antes de los 14 días, con bajo riesgo de sangrado y expectativa vida > 1 año

blood
How I Treat

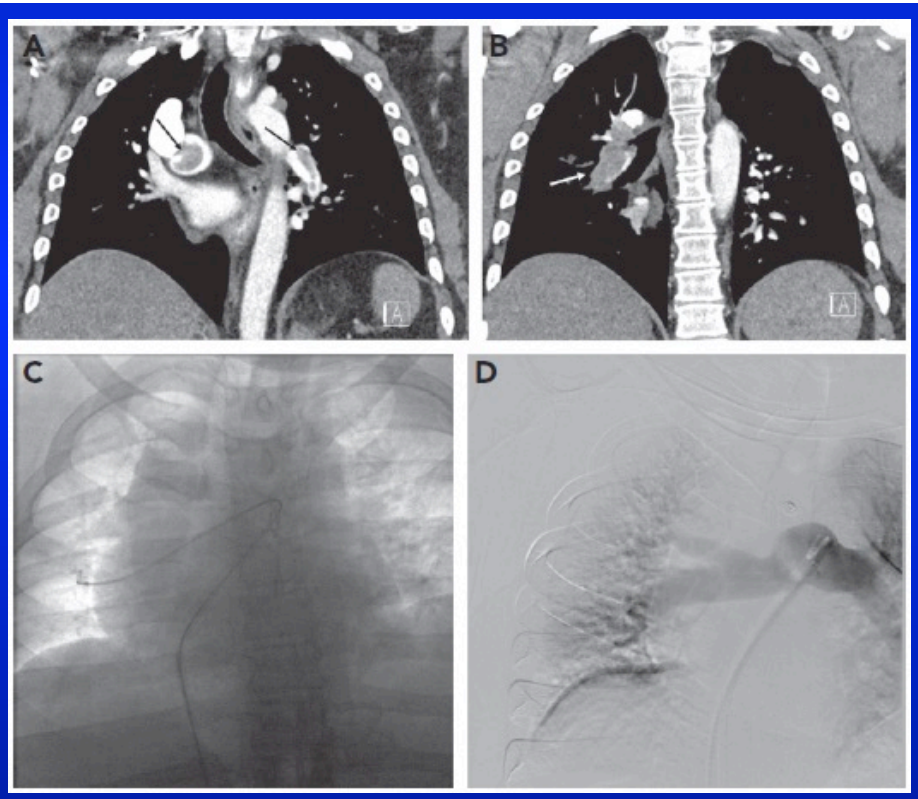
How I use catheter-directed interventional therapy to treat patients with venous thromboembolism

Suresh Vedantham[1] and Akhilesh K. Sista[2]

Patient 1
Proximal DVT and PTS

Patient 2
Submassive PE

Patient 3
Massive PE



Vedantham S. y Sista AK. Blood 2018

Filtro en Vena Cava Inferior

- **Falla de tratamiento bajo heparinización**

- **Contraindicación absoluta de anticoagulación**

<u>Observaciones</u>: incrementa el riesgo de TVP recurrente y no es seguro que disminuya el riesgo de TEP y mortalidad.

Wells PS. JAMA 2014

Tratamiento del TEV

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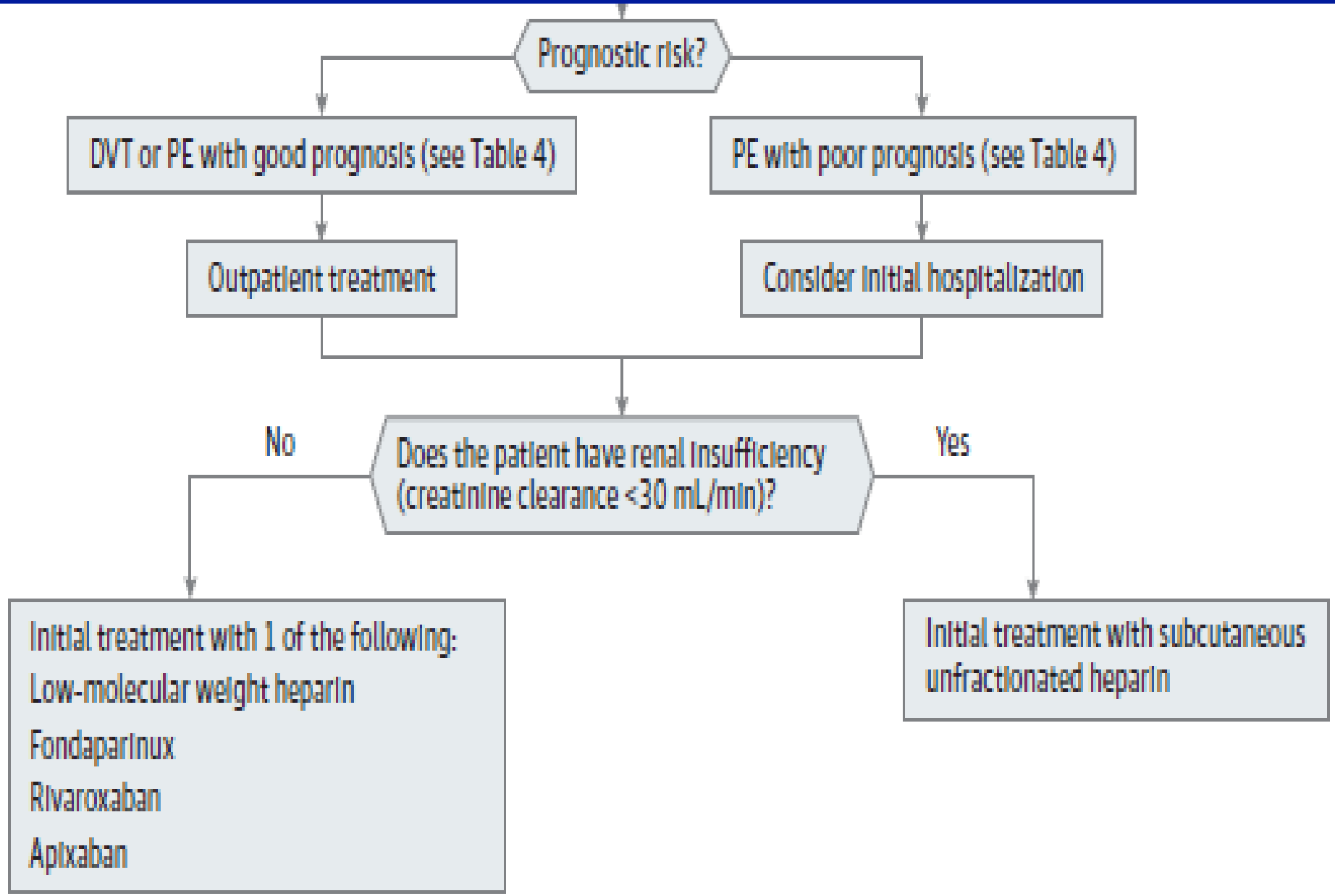
Tratamiento Inicial con Anticoagulación



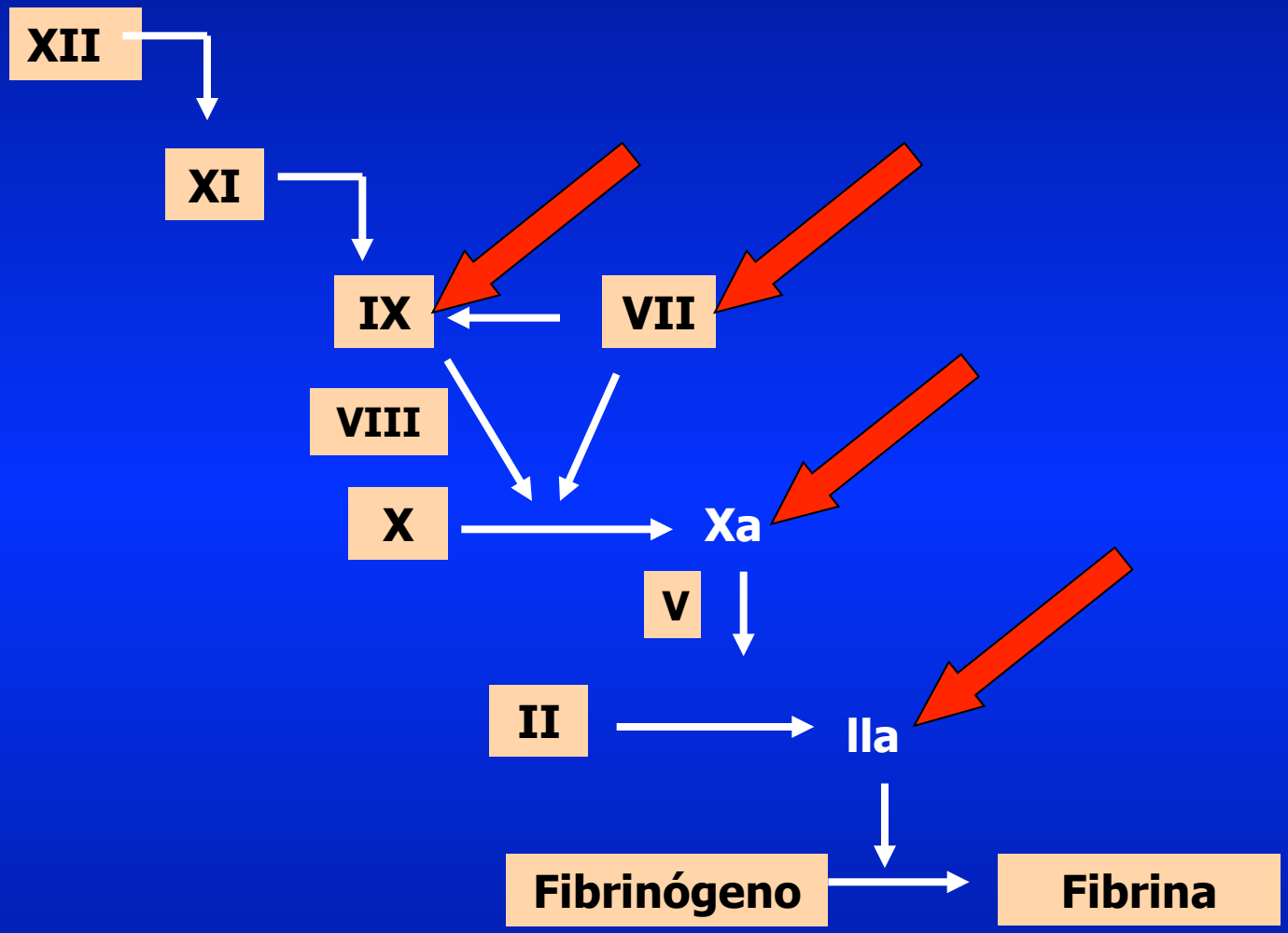
HBPM . Características que las Diferencian de HNF

- Farmacocinética más predecible
- > anti Xa que anti IIa
- > vida media
- < riesgo de efectos adversos no hemorrágicos

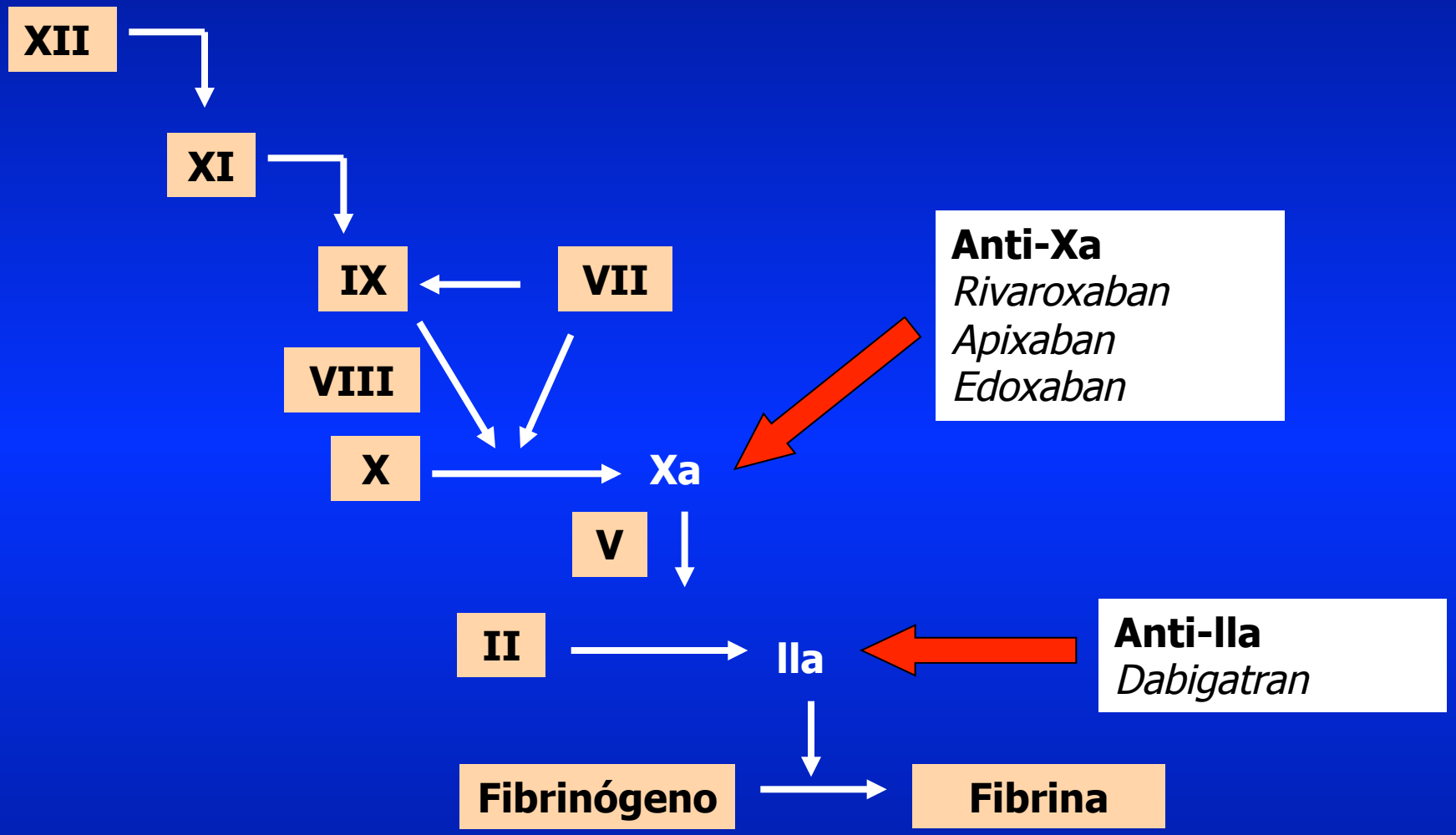
1- Aplicación subcutánea (1 a 2 veces x día)

2- Sin necesidad de monitoreo

Dicumarínicos



Anticoagulantes Orales Directos (AODs)



Drogas para el Tratamiento del TEV

Agente	Dosis	Vida media (horas)	Eliminación renal (%)
Heparina	• Bolo EV: 80 U/kg Luego : 18 U/kg/hora (KPTT/ antiXa) * •SC: 333 U/kg Luego: 250 U/kg c/12 hs	1,5	30
Enoxaparina	• SC: 1 mg/kg c/12 hs • SC: 1,5 mg/kg c/24 hs	3-4	80
Nadroparina	• SC: 86 UI/kg c/12 hs • SC: 171 UI/kg c/24 hs	3-4	80

* Heparinemia: HNF = 0,3-0,7 UI/ml
HBPM = 0,5-1,2 UI/ml

Drogas Orales para el Tratamiento del TEV

Agente	Dosis	Vida media (horas)	Eliminación renal (%)
Anti-Vit.K	• Warfarina: 0,5-6 mg/día •Acenocumarol: 1-3 mg/día VO (RIN 2-3)	36-48 hs	2
Rivaroxaban	• 15 mg c/12 hs x 3 sem. Luego 20mg c/24 hs	7-11	33
Apixaban	• 10 mg c/12 hs x 10 dias Luego 5 mg c/24 hs	8-12	25
Dabigatran	• 150 mg c/12 hs luego de 7-10 días con HBPM	14-17	80

Diferencias Farmacológicas

Variable	Dicumarínicos	AODs
Interacción con alimentos	>	
Interacción con medicamentos	>	
Eliminación renal		>
Vida media	> (40 horas)	(7-14 horas)
Velocidad de acción	(4-5 días)	> (2-4 horas)
Medición de efecto y ajuste de dosis	Sí	No

AODs y Función Renal

Agente	ClCr > 50 ml/min	ClCr 30-49 ml/ min	ClCr 15-29 ml/ min
Rivaroxaban	20mg c/24 hs	15 mg c/24 hs	Evitar uso
Apixaban	5mg c/12 hs	5mg c/12 hs	5mg c/12 hs
Dabigatran	150 mg c/12 hs	150 mg c/12 hs	Evitar uso

AODs

- **Problemas generales**

  1- Ausencia de monitoreo (adherencia y control)

  2- Falta de antídoto

  3- Bioacumulación por deterioro renal

  4- Traslado de los costos al paciente

AODs

No candidatos para su uso en TEV

1- Preferencia del paciente (costo económico)

2- Acceso a buen control del RIN

3- Insuficiencia renal (<30 ml/min)

4- Uso concomitante de inductores o inhibidores de P-gp o CYP3A4

5- Antecedentes de patología digestiva y/o > 80 años

6- Posibilidad de mala adherencia al tratamiento

AODs vs Warfarina en TEV

Variable	Apixaban	Rivaroxaban	Dabigatran
Recurrencia del TEV	- 1,8%	- 1,2%	+ 1,0%
Hemorragia mayor	- 7,5%	- 5.0%	- 2,6%
Costos/ pac./año	- U$S 4.440	- U$S 2.971	- U$S 572

Amin A, y col. Clin Appl Thromb/Hemost. 2016

*2. In patients with DVT of the leg or PE and no cancer, as long-term (first 3 months) anticoagulant therapy, we suggest dabigatran, rivaroxaban, apixaban, or edoxaban over vitamin K antagonist (VKA) therapy (all Grade 2B).

For patients with DVT of the leg or PE and no cancer who are not treated with dabigatran, rivaroxaban, apixaban, or edoxaban, we suggest VKA therapy over low-molecular weight heparin (LMWH) (Grade 2C).

Kearon C, et al. Chest 2016

Tratamiento Inicial del TEV (días 1-10)

- **TEV sospechado: -HNF 5.000 U (EV)**
  o HBPM 1 mg /kg (SC)

- **TEV confirmado:**
  -HNF (EV)*/HBPM/HNF (SC)*** + dicumarínicos**
  o
  -AODs (rivaroxaban / apixaban)

**** Preferible en: disfunción VD, phlegmasia caerulea/alba dolens, riesgo alto para sangrado ,incertidumbre sobre la necesidad de trombolisis, insuficiencia renal***

***** Puede aplicarse 1 vez por día***

****** Con clearance de creatinina <30ml/min. Dosis inicial 250 U/kg y luego 200 U/kg c/12 hs.***

TEP. Tratamiento Inicial Según Riesgo de Muerte

Riesgo alto *(shock-hipotensión + disfunción VD)*

- **Trombolisis + heparina no fraccionada (HNF) o heparina de bajo peso molecular (HBPM)**

Riesgo int. *(normotensión, con/sin disfunción VD con/sin injuria miocárdica)*

- **HBPM o HNF**

Riesgo bajo *(normotensión, sin disfunción VD sin injuria miocárdica)*

- **HBPM o rivaroxaban o apixaban (en domicilio)**

[Evidence-Based Medicine]

CHEST

Antithrombotic Therapy for VTE Disease

CHEST Guideline and Expert Panel Report

Clive Kearon, MD, PhD; Elie A. Akl, MD, MPH, PhD; Joseph Ornelas, PhD; Allen Blaivas, DO, FCCP; David Jimenez, MD, PhD, FCCP; Henri Bounameaux, MD; Menno Huisman, MD, PhD; Christopher S. King, MD, FCCP; Timothy A. Morris, MD, FCCP; Namita Sood, MD, FCCP; Scott M. Stevens, MD; Janine R. E. Vintch, MD, FCCP; Philip Wells, MD; Scott C. Woller, MD; and COL Lisa Moores, MD, FCCP

CrossMark

PODCAST

13. In patients with acute isolated distal DVT of the leg and (i) without severe symptoms or risk factors for extension (see text), we suggest serial imaging of the deep veins for 2 weeks over anticoagulation (Grade 2C) or (ii) with severe symptoms or risk factors for

extension (see text), we suggest anticoagulation over serial imaging of the deep veins (Grade 2C).

CHEST 2016; 149(2):315-352

14. In patients with acute isolated distal DVT of the leg who are managed with anticoagulation, we recommend using the same anticoagulation as for patients with acute proximal DVT (Grade 1B).

15. In patients with acute isolated distal DVT of the leg who are managed with serial imaging, we (i) recommend no anticoagulation if the thrombus does not extend (Grade 1B), (ii) suggest anticoagulation if the thrombus extends but remains confined to the distal veins (Grade 2C), and (iii) recommend anticoagulation if the thrombus extends into the proximal veins (Grade 1B).

TEV . Extensión del Tratamiento

- **Considerar**

  1- Tipo y etiología

  TVP, TVD, TEP

  Provocado o no provocado

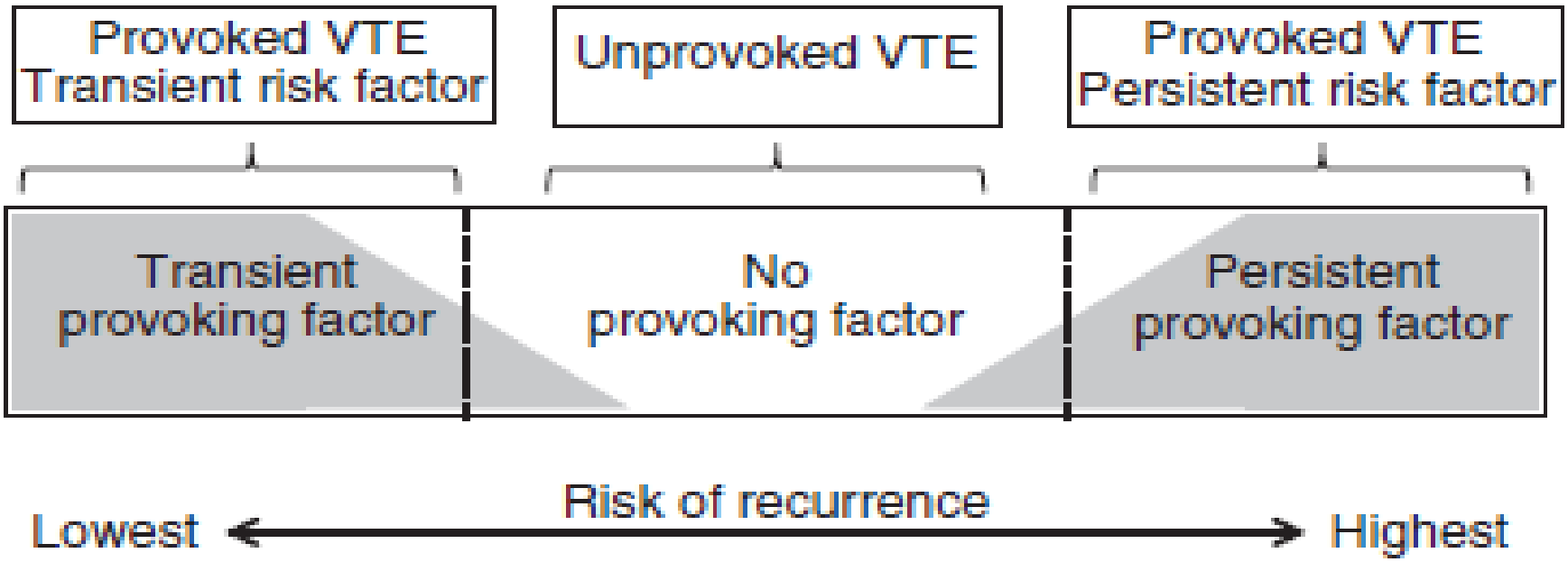
  2-Riesgo de recurrencia

  3-Riesgo de hemorragia

Categorization of patients as having provoked or unprovoked venous thromboembolism: guidance from the SSC of ISTH

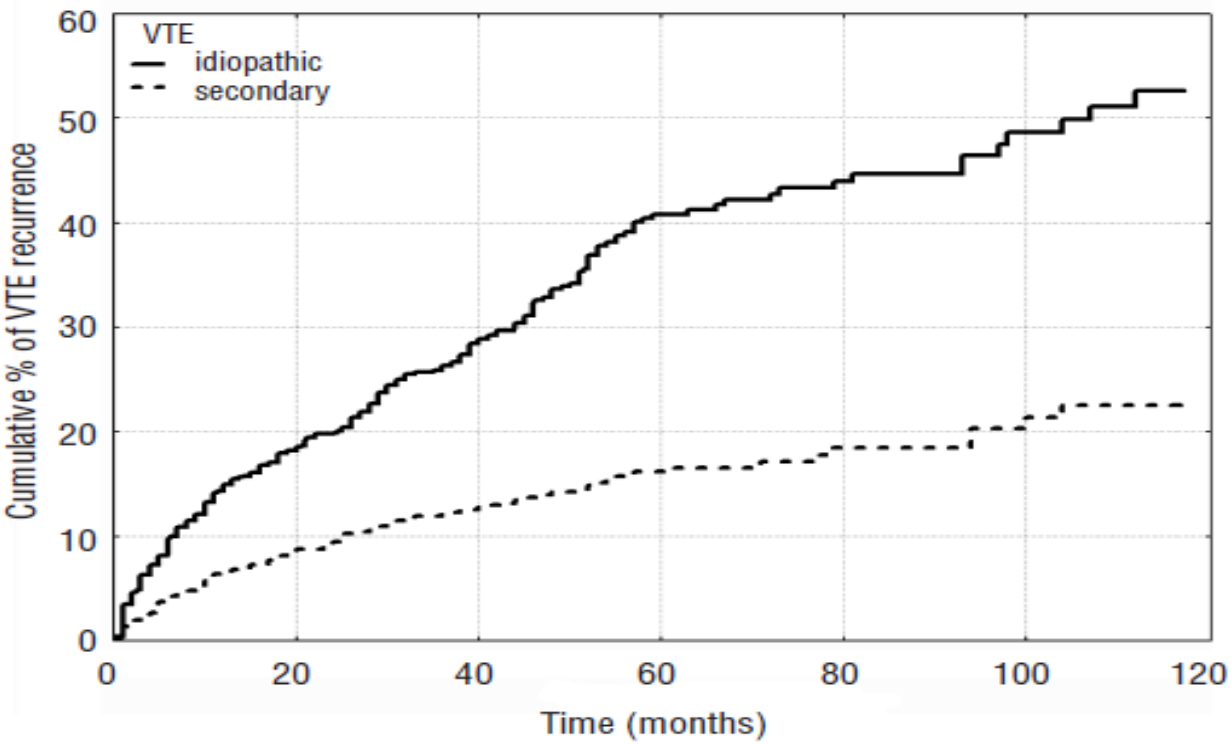
C. KEARON,* W. AGENO,† S. C. CANNEGIETER,‡ B. COSMI,§ G.-J. GEERSING¶ and P. A. KYRLE,** FOR THE SUBCOMMITTEES ON CONTROL OF ANTICOAGULATION, AND PREDICTIVE AND DIAGNOSTIC VARIABLES IN THROMBOTIC DISEASE

*McMaster University, Hamilton, ON, Canada; †University of Insubria, Varese, Italy; ‡Leiden University, Leiden, the Netherlands; §University of Bologna, Bologna, Italy; ¶Utrecht University, Utrecht, the Netherlands; and **Medical University of Vienna, Vienna, Austria



Kearon C, y col. J Thromb Haemost 2016;14:1480-83

The risk of recurrent venous thromboembolism after discontinuing anticoagulation in patients with acute proximal deep vein thrombosis or pulmonary embolism. A prospective cohort study in 1,626 patients



Interpretation and Conclusions

Besides unprovoked presentation, other factors independently associated with a statistically significant increased risk of recurrent VTE are thrombophilia, clinical presentation with primary DVT, shorter duration of anticoagulation, and increasing age.

Prandoni P, y col. Haematologica 2007

Contents lists available at ScienceDirect

Thrombosis Research

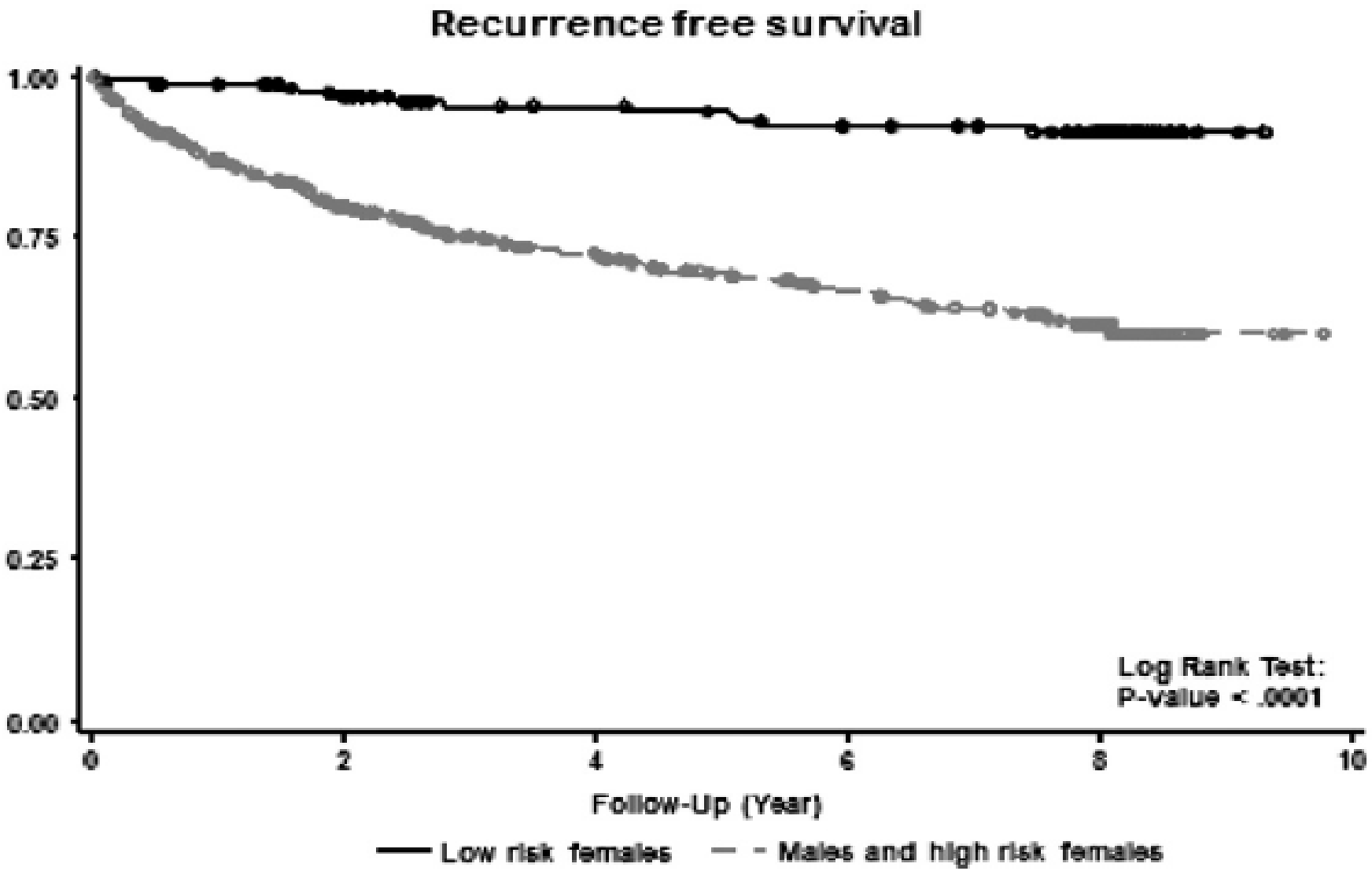
journal homepage: www.elsevier.com/locate/thromres

Long-term risk of venous thrombosis after stopping anticoagulants for a first unprovoked event: A multi-national cohort

Marc A. Rodger [a,b,*], Dimitri Scarvelis [a,b], Susan R. Kahn [c,d], Philip S. Wells [a,b], David A. Anderson [e], Isabelle Chagnon [f], Grégoire Le Gal [a,b], Esteban Gandara [a,b], Susan Solymoss [c], Elham Sabri [a,b], Judy Kovacs [h], Michael J. Kovacs [g]

Hyperpigmentation
Edema
Redness
D-dimero (Vidas > 250 mcg/ml)
Obesity (BMI > 30 kg/m2)
Older (> 60 años)

Rodger MA, y col. Thrombosis Research 2016



Bajo riesgo: mujeres HERDOO ≤ 1
Alto riesgo: Hombres/mujeres HERDOO ≥ 2

European Heart Journal (2014) 35, 3033–3080
doi:10.1093/eurheartj/ehu283

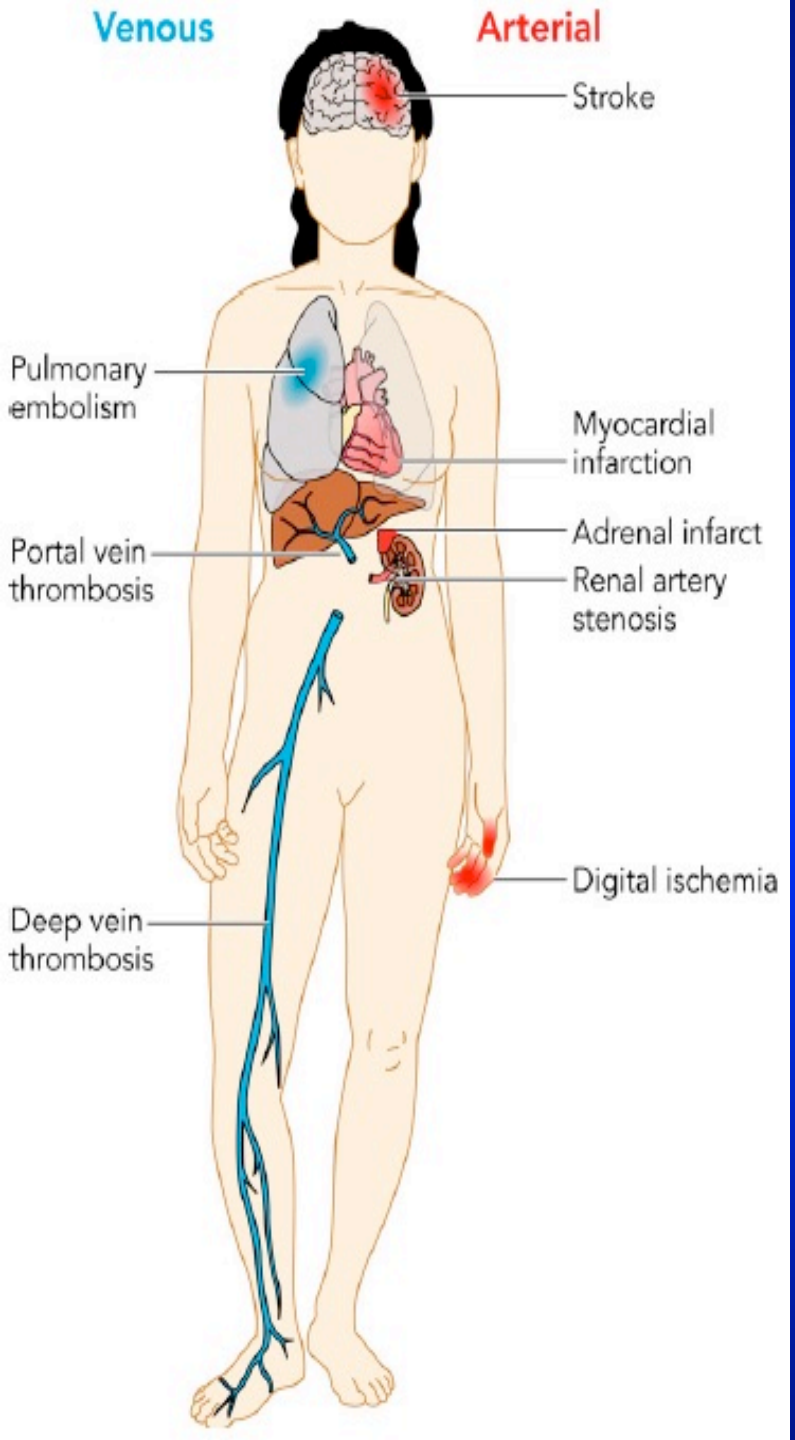
2014 ESC Guidelines on the diagnosis and management of acute pulmonary embolism

The Task Force for the Diagnosis and Management of Acute Pulmonary Embolism of the European Society of Cardiology (ESC)

Endorsed by the European Respiratory Society (ERS)

The assessment of the risk of recurrence in patients with unprovoked PE is more complex.[54–56] The following risk factors may help to identify patients at higher long-term relative risk of recurrence (1.5–2.0): (i) one or more previous episodes of VTE, (ii) antiphospholipid antibody syndrome, (iii) hereditary thrombophilia and (iv) residual thrombosis in the proximal veins. An additional risk factor for recurrence after PE was reported to be the persistence of RV dysfunction at hospital discharge as assessed by echocardiography.[366] On the other hand, a negative D-dimer test one month after withdrawal of VKA seems to be a protective factor for recurrence of VTE (RR 0.4).[367]

Konstantinides SV, y col. European Chest Journal 2014



Trombofilia de alto riesgo

- Anticuerpos antifosfolípidos
- Déficit de Prot C-S, o de AT
- Factor V Leiden homocigota
- P20210 homocigota
- Síndromes mieloproliferativos Ph negativos
- Hemoglobinuria paroxística nocturna

Laureano M. y Crowter MA. Blood 2018
Pengo V. y col. Blood 2018
Connors JM. N Engl J Med 2107

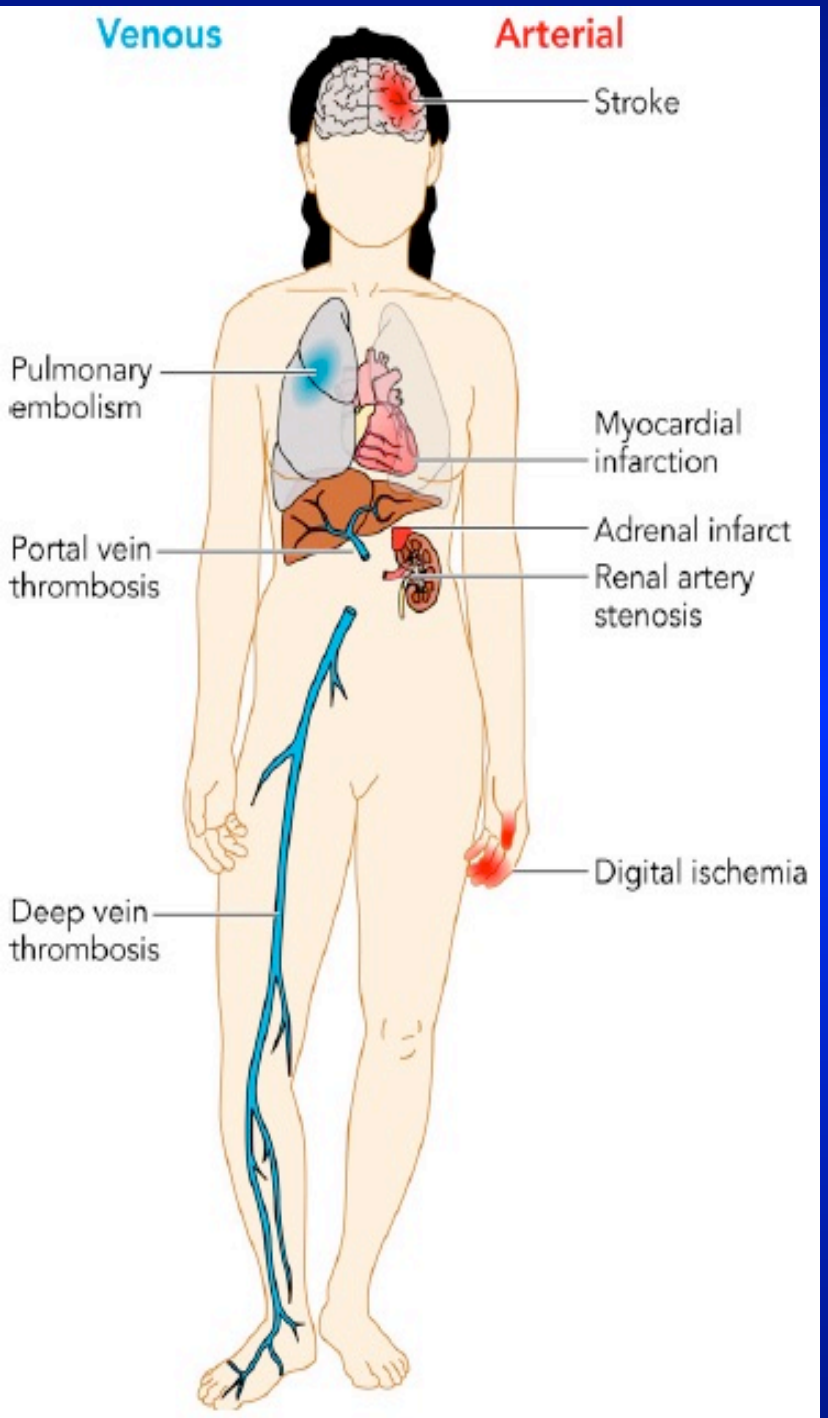
Table 1. Clinical Characteristics Suggestive of Inherited Thrombophilia in Patients with Venous Thromboembolism (VTE).

Thrombosis at a young age (<50 yr), especially in association with weak provoking factors (minor surgery, combination oral anticoagulants, or immobility) or unprovoked VTE
Strong family history of VTE (first-degree family members affected at a young age)
Recurrent VTE events, especially at a young age*
VTE in unusual sites such as splanchnic or cerebral veins†

* The antiphospholipid syndrome must also be considered, but it is not inherited.

† Patients with splanchnic-vein VTE should be assessed for myeloproliferative neoplasms and paroxysmal nocturnal hemoglobinuria.

Connors JM. N Engl J Med 2017;377:1177-87



CLINICAL TRIALS AND OBSERVATIONS

Comment on Pengo et al, page 1365

Higher-risk APS: do we dare to DOAC?

Marissa Laureano and Mark A. Crowther | McMaster University

In this issue of *Blood*, Pengo et al present a randomized control trial comparing the use of rivaroxaban and warfarin in high-risk patients with antiphospholipid antibody syndrome (APS). The trial was stopped early because of an increased number of events in the rivaroxaban arm.[1]

Warfarina (RIN 2-3) sigue siendo el tratamiento estándar. Rivaroxaban produjo más hemorragias.

Laureano M. y Crowter MA. Blood 2018
Pengo V. y col. Blood 2018

Long term risk of symptomatic recurrent venous thromboembolism after discontinuation of anticoagulant treatment for first unprovoked venous thromboembolism event: systematic review and meta-analysis

Faizan Khan,[1,2] Alvi Rahman,[3] Marc Carrier,[1,2,4] Clive Kearon,[5] Jeffrey I Weitz,[5] Sam Schulman,[5,6] Francis Couturaud,[7] Sabine Eichinger,[8] Paul A Kyrle,[8] Cecilia Becattini,[9] Giancarlo Agnelli,[9] Timothy A Brighton,[10] Anthonie W A Lensing,[11] Martin H Prins,[12] Elham Sabri,[2] Brian Hutton,[12] Laurent Pinede,[13] Mary Cushman,[14] Gualtiero Palareti,[15] George A Wells,[1,16] Paolo Prandoni,[15] Harry R Büller,[17] Marc A Rodger,[1,2,4] for the MARVELOUS Collaborators

by a major transient risk factor.[3-5] Consequently, anticoagulant treatment is discontinued after three to six months in patients with VTE due to a major transient provoking factor, whereas current guidelines suggest extended (ie, indefinite) anticoagulation in patients with unprovoked proximal deep vein thrombosis or pulmonary embolism who have a non-high bleeding risk.[6-8] This is, however, a weak (grade 2B) recommendation, in large part as a result of

the bmj | *BMJ* 2019;366:l4363 | doi: 10.1136/bmj.l4363

TABLE 11] Risk Factors for Bleeding with Anticoagulant Therapy and Estimated Risk of Major Bleeding in Low-, Moderate-, and High-Risk categories[a]

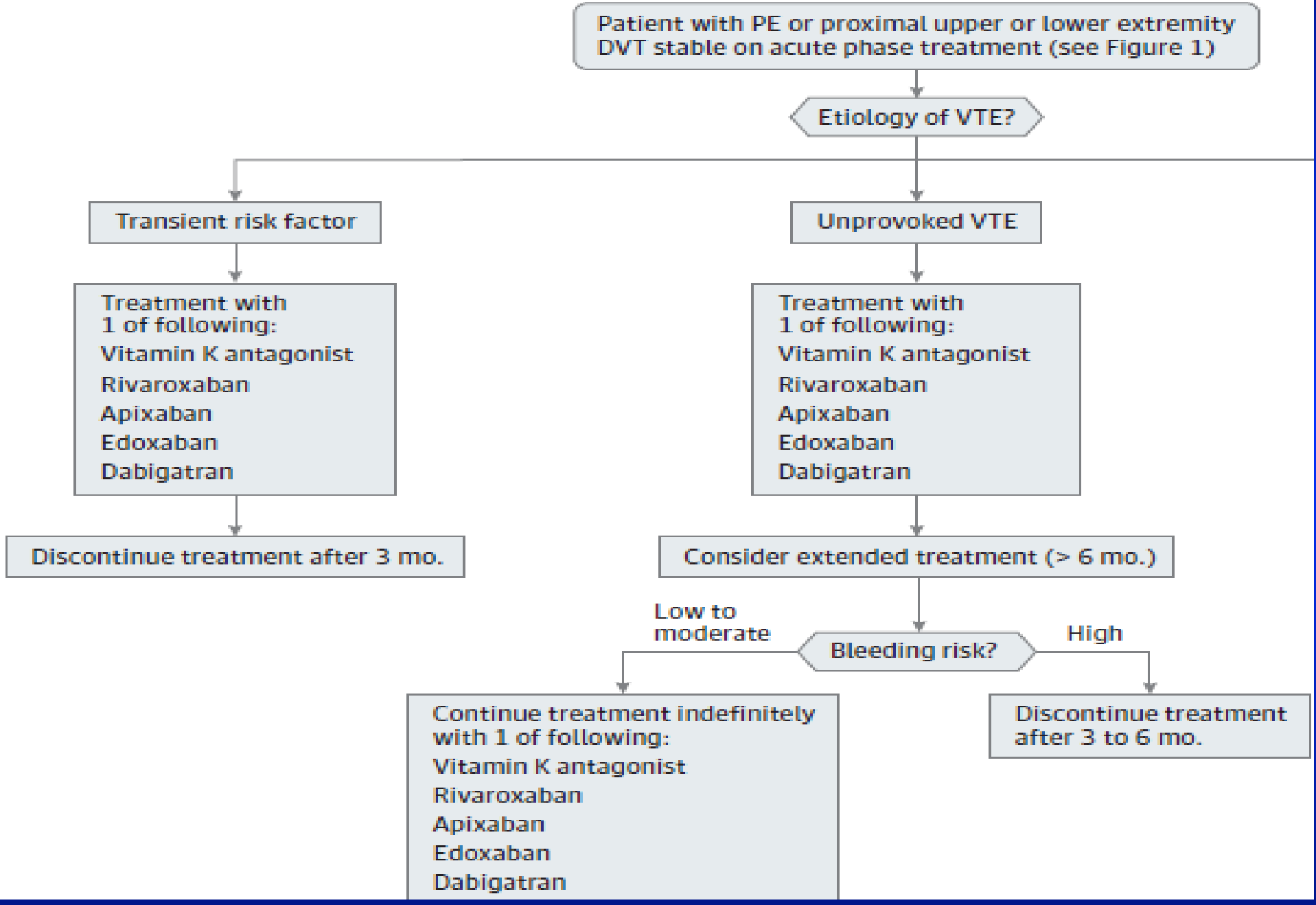
Risk Factors[b]
Age >65 y[184-193]
Age >75 y[184-188,190,192,194-202]
Previous bleeding[185,191-193,198,201-204]
Cancer[187,191,195,198,205]
Metastatic cancer[181,204]
Renal failure[185,191-193,196,199,201,206]
Liver failure[186,189,195,196]
Thrombocytopenia[195,204]
Previous stroke[185,192,195,207]
Diabetes[185,186,196,200,202]
Anaemia[185,189,195,198,202]
Antiplatelet therapy[186,195,196,202,208]
Poor anticoagulant control[189,196,203]
Comorbidity and reduced functional capacity[191,196,204]
Recent surgery[189,209,c]
Frequent falls[195]
Alcohol abuse[191,192,195,202]
Nonsteroidal anti-inflammatory drug[210]

Kearon C, y col. Chest 2016

Riesgo de Hemorragia

Tiempo de anticoagulación	Sin factores de riesgo	Un factor de riesgo	Más de 1 factor de riesgo
Hasta 3 meses	1,6 %	3,2%	12,8%
Después de los 3 meses	0,8%/año	1,6%/año	> 6,5%/año

Fase Prolongada y de Extensión



Recomendaciones ACCP

Tipo	Duración de anticoagulación	Agente
TVD*, TVP, TEP. (Provocados)	3 meses	AODs > anti-K (heparina antes de dabi o edox y superpuesta a anti-K)
TVD*, TVP, TEP. ("Idiopáticos")	3 meses y luego evaluar riesgo de extensión	AODs > anti-K (si se suspenden a 3 meses se puede continuar con AAS)
TEV asociado a cáncer	"Indefinido"	Primeros 3 meses HBPM > AODs/anti-K

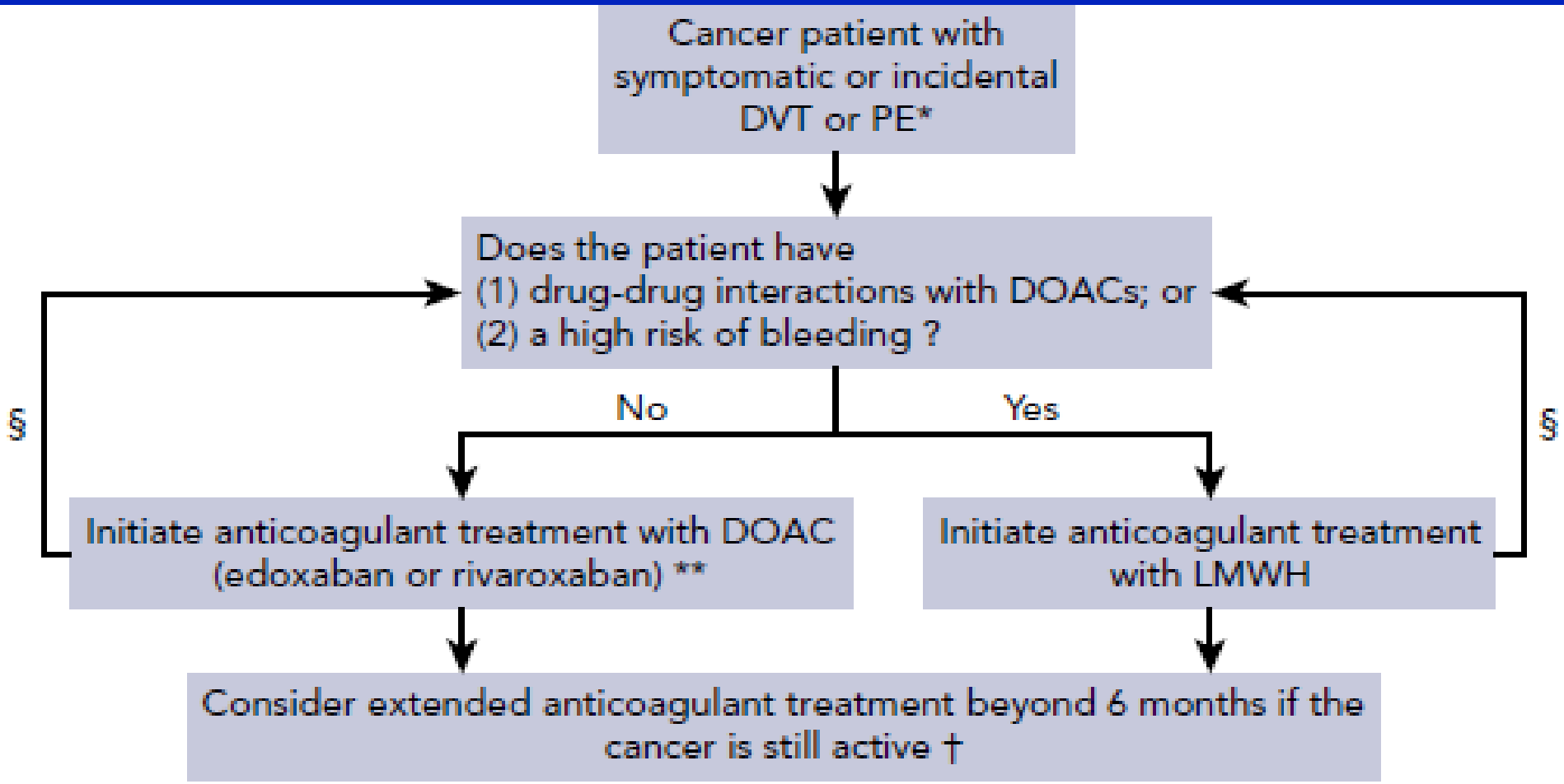
* En TVD puede decidirse no anticoagular y hacer seguimiento con ultrasonografía (dependiendo esta instancia de la existencia o no de factores de riesgo)

Kearon C, y col. Chest 2016

How I treat cancer-associated venous thromboembolism

Noémie Kraaijpoel[1] and Marc Carrier[2]

[1]Department of Vascular Medicine, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands; and [2]Department of Medicine, Ottawa Hospital Research Institute, University of Ottawa, Ottawa, ON, Canada



Kraaijpoel N. y Carrier M. Blood 2019

Anticoagulating patients with high risk acquired thrombophilias: APS, HIT and PNH

Leslie Skeith, MD, FRCPC[1-3]

[1]Division of Hematology and Hematological Malignancies, Department of Medicine, University of Calgary, Canada; [2]Department of Community Health Sciences, University of Calgary, Calgary, Canada; [3]Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, Canada

Randomized trials evaluating DOACs in patients with APS are reviewed. Further research is needed prior to widely adopting DOACs for use in these high-risk acquired thrombophilias; however, there may be selected low-risk subgroups where DOAC use is possible after careful consideration and patient discussion.

Skeith L, y col. Blood 2018

Tratamiento del TEV

- ***Fases del tratamiento***
  Aguda: hasta días 5- 10
  Prolongada: primeros 3 meses
  Extendida con tope: 6-12-24 meses
  Extendida sin tope: "indefinida"

- ***¿Internado o en su casa?***

- ***¿Anticoagulación, trombolisis o filtro?***

- ***Elección del agente y duración del tratamiento***

- **Prevención del síndrome postrombótico**

How I treat the postthrombotic syndrome

Anat Rabinovich[1] and Susan R. Kahn[2,3]

[1]Thrombosis and Hemostasis Unit, Hematology Institute, Soroka University Medical Center, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel; [2]Center for Clinical Epidemiology, Jewish General Hospital/Lady Davis Institute, and [3]Division of Internal Medicine, Department of Medicine, McGill University, Montreal, QC, Canada

The postthrombotic syndrome (PTS) is a chronic complication of deep vein thrombosis (DVT) that imposes significant morbidity, reduces quality of life, and is costly. After DVT, 20% to 50% of patients will develop PTS, and up to 5% will develop severe PTS. The principal risk factors for PTS are anatomically extensive DVT, recurrent ipsilateral DVT, obesity, and older age. By preventing the initial DVT and DVT recurrence, primary and secondary prophylaxis of DVT will reduce occurrence of PTS. The effectiveness of elastic compression stockings (ECSs) for PTS prevention is controversial. Catheter-directed thrombolysis is not effective to prevent PTS overall but may prevent more severe forms of PTS and should be reserved for select patients with extensive thrombosis, recent symptoms onset, and low bleeding risk. For patients with established PTS, the cornerstone of management is ECS, exercise, and lifestyle modifications. Surgical or endovascular interventions may be considered in refractory cases. Because of a lack of effective therapies, new approaches to preventing and treating PTS are needed. This article uses a case-based approach to discuss risk factors for PTS after DVT, how to diagnose PTS, and available means to prevent and treat PTS, with a focus on new information in the field. (*Blood*. 2018;131(20):2215-2222)

Comment on Amin et al, page 2298

Postthrombotic syndrome: simple prevention

Susan Solymoss | The McGill University Health Center

In this issue of *Blood*, Amin et al provide data showing early compression therapy post–venous thromboembolism (VTE) to be effective in reducing the incidence of postthrombotic syndrome (PTS) by achieving reduced residual vein obstruction (RVO) on follow-up ultrasound.[1]

Solymoss S. Blood 2018

Algunos Problemas en el Manejo del Tromboembolismo Venoso Conclusiones

1- Diagnóstico centrado en score clínico, dímero-D y TAC

2- Varias opciones terapéuticas (HNF, HBPM, dicumarínicos, AODs) que deben seleccionarse en forma personalizada

3- No se recomiendan AODs en trombofilia severa ni en cáncer con alto riesgo hemorrágico

4- La utilización de AODs requiere necesariamente del control y asesoramiento hematológico