D Dimères à toutes les sauces?

Maladie thromboembolique veineuse

Jean-Marc Chauny

TOP MU

27 juin 2022

Discuter de l'interprétation des DD dans des contextes particuliers :

Grossesse, COVID, ACO, Sx plutôt subaigu, etc.

MTEV: Objectifs

Investigation en 2022 des embolies pulmonaires avec les D Dimères

- Grossesse
- COVID
- ACO
- Symptômes non aigus (MPOC, personnes âgées, néoplasie)

Et imagerie par la suite

Décision partagée

Conflits d'intérêt

- ☑ Je n'ai aucun conflit d'intérêt réels ou potentiel en lien ou non avec le contenu de cette présentation

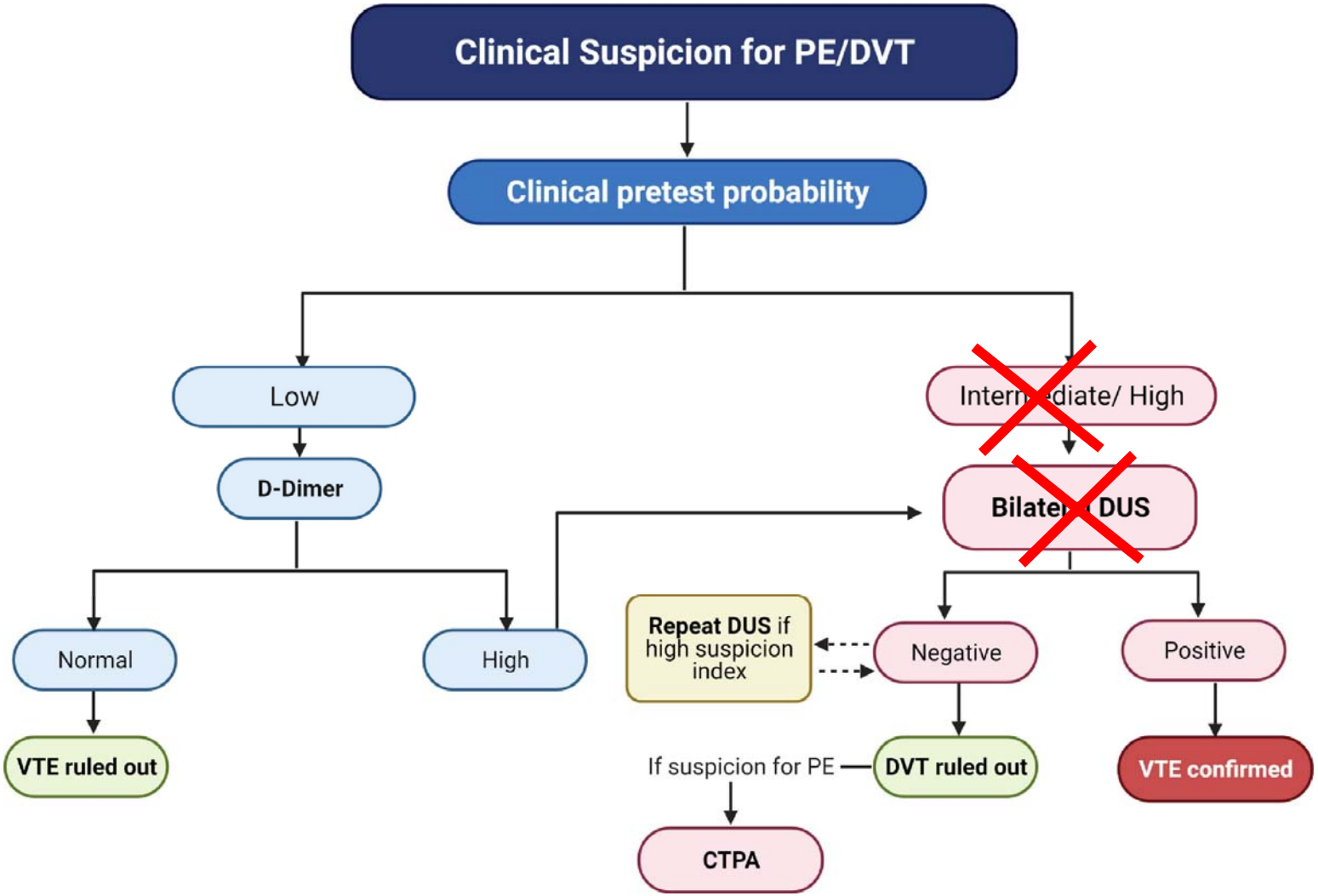
Mais collaboration à l'article de Dr Freund :
Freund Y, Drogrey M, Miro O, Marra A, Feral-Pierssens AL, Penaloza A, et al.
Association Between Pulmonary Embolism and COVID-19 in Emergency Department Patients Undergoing Computed Tomography Pulmonary Angiogram: The PEPCOV International Retrospective Study.
Acad Emerg Med. 2020;27(9).

5 fois le risque
1ère cause de mortalité
Changement de la coagulation
Présentation clinique aussi complexe

5 cas sur 10 000 grossesses

Rechercher les facteurs de risque
Identifier les hautes probabilités

Facteurs de risque	OR
Facteur V de Leiden homozygote	34,4
Mutation G2021A prothrombine	26,4
Antécédents personnels ou familial EP	24,8
Anticorps antiphospholipides	15,8
Infection sans césarienne	20,2
Hémorragie post-partum avec chirurgie	12,0
Immobilité post-partum	10,8
Anémie falciforme	6,7
Tabagisme post-partum	3,4



Bukhari S, et al. Venous thromboembolism during pregnancy and postpartum period. Eur J Intern Med. Epub 2021/12/25.

Righini M, et al. Annals of Internal Medicine. 2018.

Annals of Internal Medicine

ORIGINAL RESEARCH

Diagnosis of Pulmonary Embolism During Pregnancy

A Multicenter Prospective Management Outcome Study

Marc Righini, MD; Helia Robert-Ebadi, MD; Antoine Elias, MD, PhD; Olivier Sanchez, MD, PhD; Emmanuelle Le Moigne, MD; Jeannot Schmidt, MD; Catherine Le Gall, MD; Jacques Cornuz, MD, PhD; Drahomir Aujesky, MD, MSc; Pierre-Marie Roy, MD, PhD; Céline Chauleur, MD, PhD; Olivier T. Rutschmann, MD; Pierre-Alexandre Poletti, MD; and Grégoire Le Gal, MD, PhD; for the CT-PE-Pregnancy Group*

The DiPEP study: an observational study of the diagnostic accuracy of clinical assessment, D-dimer and chest x-ray for suspected pulmonary embolism in pregnancy and postpartum

S Goodacre,[a] K Horspool,[a] C Nelson-Piercy,[b] M Knight,[c] N Shephard,[a] F Lecky,[a] S Thomas,[d] BJ Hunt,[b] G Fuller[a] on behalf of the DiPEP research group

[a] School of Health and Related Research, University of Sheffield, Sheffield, UK [b] Guy's & St Thomas's NHS Foundation Trust, London, UK [c] National Perinatal Epidemiology Unit, University of Oxford, Oxford, UK [d] Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK

Correspondence: S Goodacre, Centre for Urgent and Emergency Care Research, School of Health and Related Research (ScHARR), Regent Court, Regent Street, Sheffield S1 4DA, UK. Email: s.goodacre@sheffield.ac.uk

Goodacre S, et al. BJOG 2019

van der Pol LM, et al. NEJM. 2019;380(12):1139-49.

ORIGINAL ARTICLE

Pregnancy-Adapted YEARS Algorithm for Diagnosis of Suspected Pulmonary Embolism

L.M. van der Pol, C. Tromeur, I.M. Bistervels, F. Ni Ainle, T. van Bemmel, L. Bertoletti, F. Couturaud, Y.P.A. van Dooren, A. Elias, L.M. Faber, H.M.A. Hofstee, T. van der Hulle, M.J.H.A. Kruip, M. Maignan, A.T.A. Mairuhu, S. Middeldorp, M. Nijkeuter, P.-M. Roy, O. Sanchez, J. Schmidt, M. ten Wolde, F.A. Klok, and M.V. Huisman, for the Artemis Study Investigators*

Annals of Internal Medicine

ORIGINAL RESEARCH

Diagnosis of Pulmonary Embolism During Pregnancy

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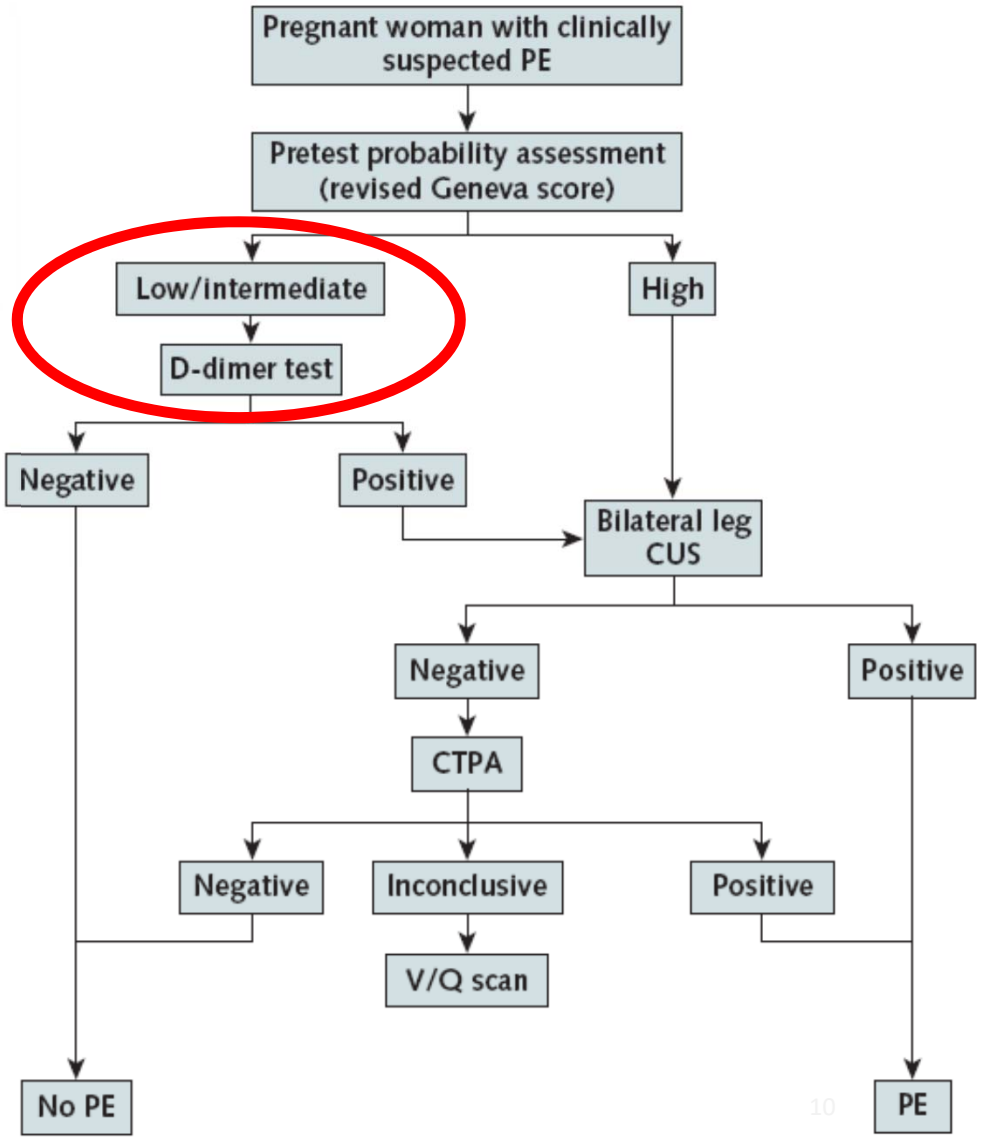

Righini M, Annals of Internal Medicine. 2018.

ORIGINAL ARTICLE

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van der Pol LM, et al. NEJM. 2019 19;380(12):1139-49.

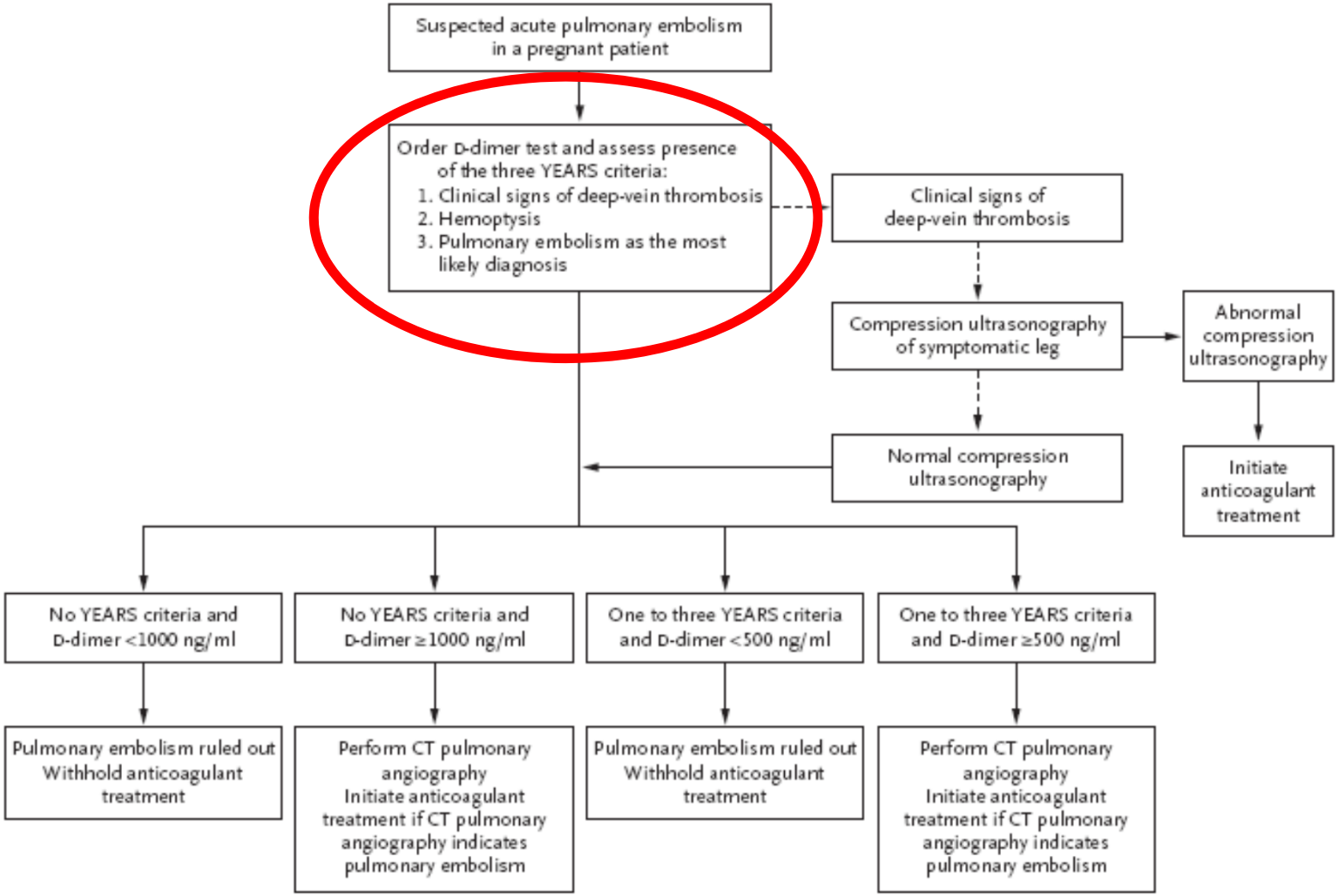

Figure 1. Pregnancy-Adapted YEARS Algorithm for the Management of Suspected Acute Pulmonary Embolism in Pregnant Patients.
CT denotes computed tomography.

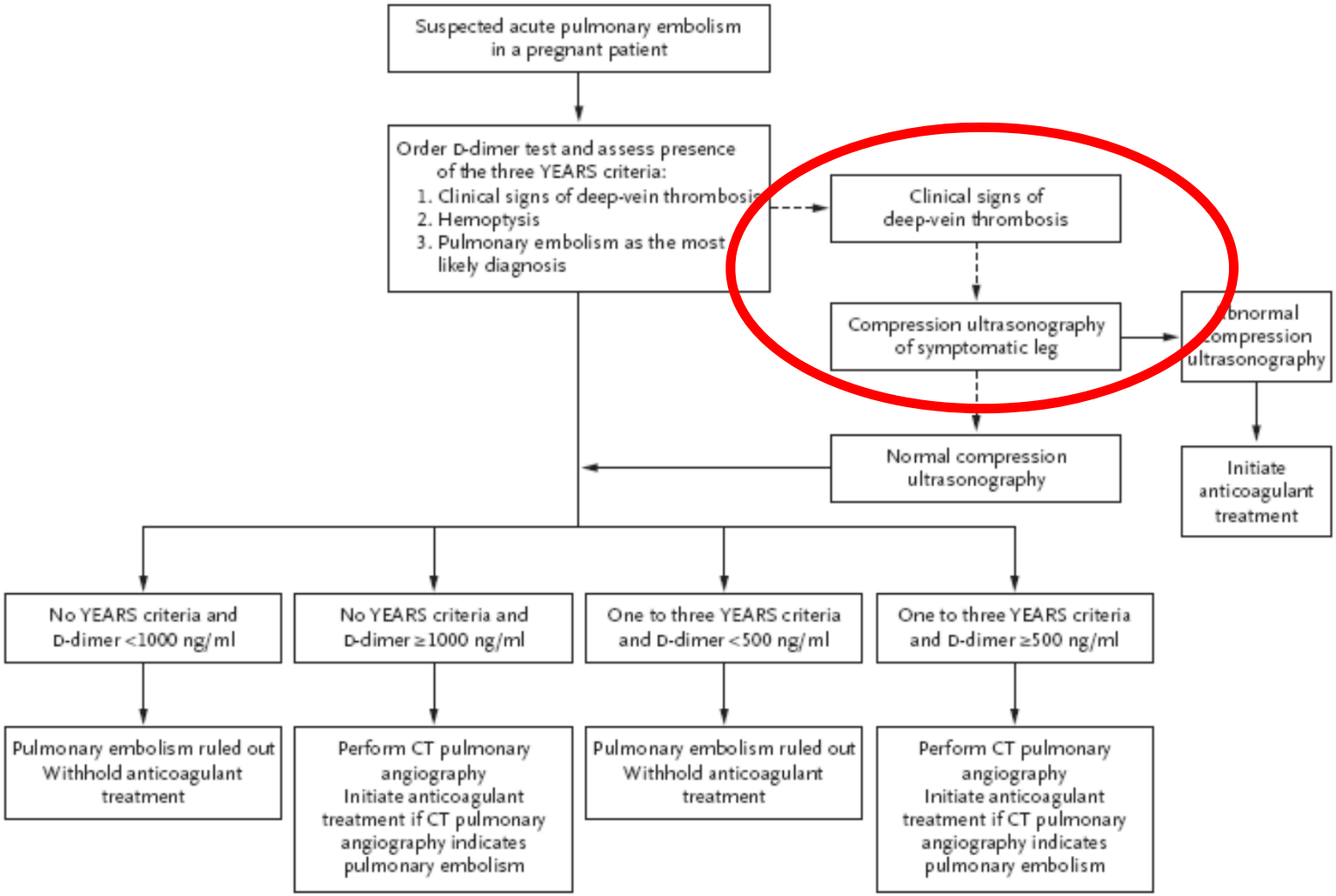

Figure 1. Pregnancy-Adapted YEARS Algorithm for the Management of Suspected Acute Pulmonary Embolism in Pregnant Patients.
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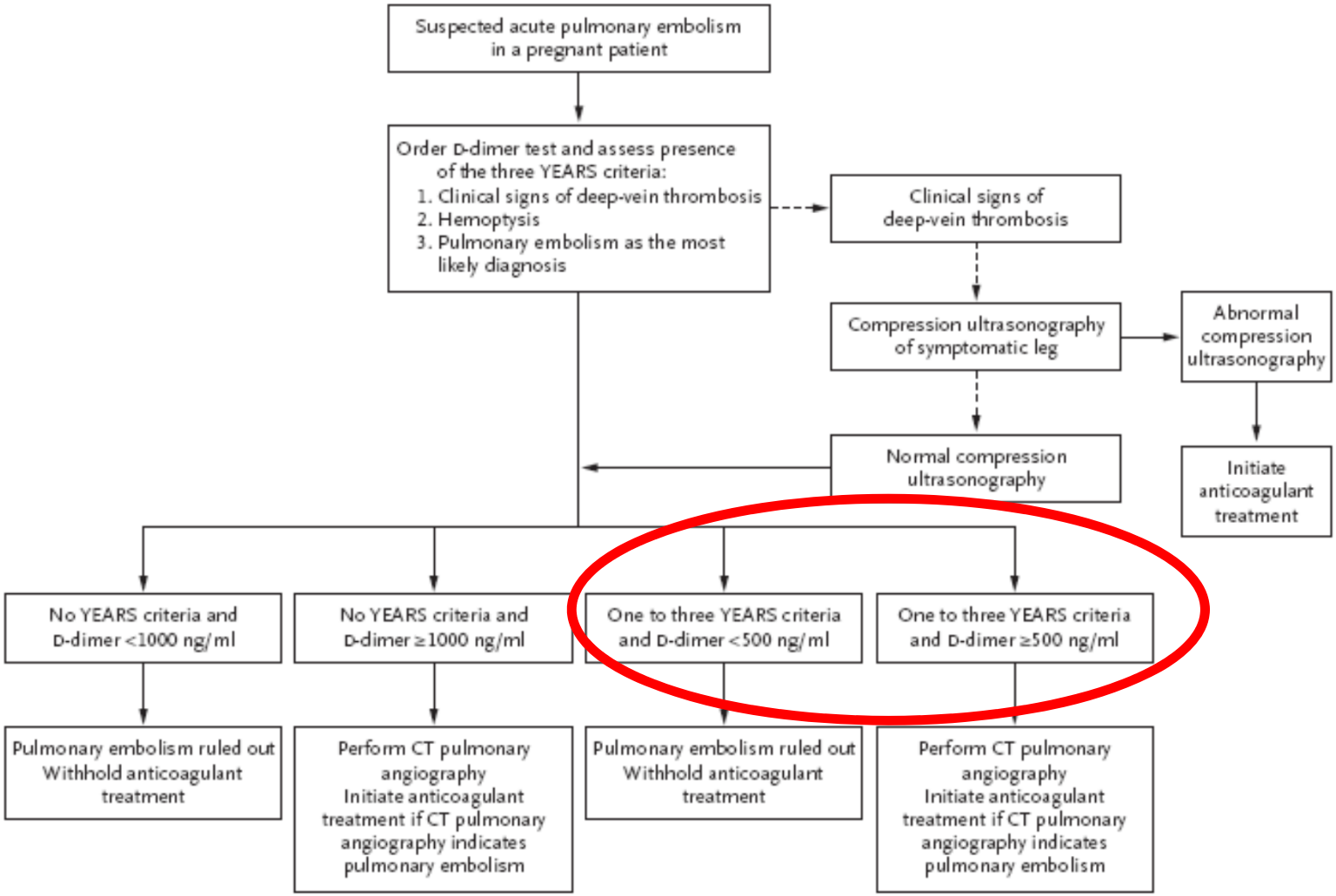

Figure 1. Pregnancy-Adapted YEARS Algorithm for the Management of Suspected Acute Pulmonary Embolism in Pregnant Patients.
CT denotes computed tomography.

Table 2. Primary and Secondary Outcomes.*

Variable	All Patients (N=498)	Patients Who Did Not Have Deep-Vein Thrombosis at Baseline (N=494)	
		CT Pulmonary Angiography Not Indicated	CT Pulmonary Angiography Indicated†
Pulmonary embolism confirmed at baseline			
No./total no.	20/498‡	0/195	16/299
% (95% CI)	4.0 (2.6–6.1)	0 (0.0–2.0)	5.4 (3.3–8.5)
Diagnosis of VTE during follow-up in patients who did not have VTE at baseline			
No./total no.	1/477§	1/195	0/283
% (95% CI)	0.21 (0.04–1.2)¶	0.51 (0.09–2.9)‖	0 (0.00–1.4)

van der Pol LM, et al. NEJM. 19;380(12):1139-49.

Table 3. Study Outcomes, According to Trimester of Pregnancy

Variable	First Trimester (N=74)	Second Trimester (N=193)	Third Trimester (N=231)
Pulmonary embolism confirmed at baseline			
No./total no.	5/74	8/193	7/231
% (95% CI)	6.8 (2.9–15)	4.2 (2.1–8.0)	3.0 (1.5–6.1)
CT pulmonary angiography not indicated*			
No./total no.	48/74	89/193	74/231
% (95% CI)	65 (54–75)	46 (39–53)	32 (26–38)
Diagnosis of VTE during follow-up†			
No./total no.	0	1/176	0
% (95% CI)		0.57 (0.1–3.2)	
Median D-dimer level (IQR) — ng/ml	505 (292–963)	730 (505–1260)	1120 (818–1718)

van der Pol LM, et al. NEJM. 19;380(12):1139-49.

ORIGINAL ARTICLE

Assessing the clinical probability of pulmonary embolism during pregnancy: The Pregnancy-Adapted Geneva (PAG) score

Helia Robert-Ebadi[1] | Antoine Elias[2,3] | Olivier Sanchez[3,4,5] | Emmanuelle Le Moigne[6] | Jeannot Schmidt[3,7] | Catherine Le Gall[3,8] | Drahomir Aujesky[9] | Pierre-Marie Roy[3,10] | Thomas Moumneh[3,10] | Céline Chauleur[11,12,13] | Frederic Rouyer[14] | Grégoire Le Gal[15,16] | Marc Righini[1]

Robert-Ebadi H, et al. Assessing the clinical probability of pulmonary embolism during pregnancy: The Pregnancy-Adapted Geneva (PAG) score. J Thromb Haemost. 2021.

Geneva Score		Pregnancy-Adapted Geneva Score	
ITEM	POINTS	ITEM	POINTS
Age >65	+1	Age 40 years and older	+1
Active malignant condition	+2		
Surgery (under GA) or lower limb fracture in past month	+2	Surgery (under GA) or lower limb fracture in past month	+2
Previous DVT or PE	+3	Previous DVT or PE	+3
Unilateral lower limb pain	+3	Unilateral lower limb pain	+3
Hemoptysis	+2	Hemoptysis	+2
Pain on lower limb palpation and unilateral edema	+4	Pain on lower limb palpation and unilateral edema	+4
Heart rate 75–94	+3	Heart rate >110 bpm	+5
>=95	+5		
Maximal point number	22	Maximal point number	20
ROC curve AUC	0.684	ROC curve AUC	0.795
95% CI	0.563–0.805	95% CI	0.690–0.899

Abbreviations: AUC, area under the curve; CI, confidence interval; DVT, deep vein thrombosis; GA, general anesthesia; ROC, receiver operating characteristic; PE, pulmonary embolism.

Robert-Ebadi H, et al. J Thromb Haemost. 2021.

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Pregnancy adapted Geneva Score (PAG Study)

TABLE 3 Patients' distribution and corresponding prevalence of PE according to the PAG Score

Points	Category	Distribution	Distribution, %	Confirmed PE, n	Prevalence of PE, %	95% CI
0–1	Low	265/390	**67.9%**	6/265	**2.3%**	1.0–4.9%
2–6	Intermediate	112/390	**28.7%**	13/112	**11.6%**	6.9–18.9%
>=7	High	13/390	**3.3%**	8/13	**61.5%**	35.5–82.2%

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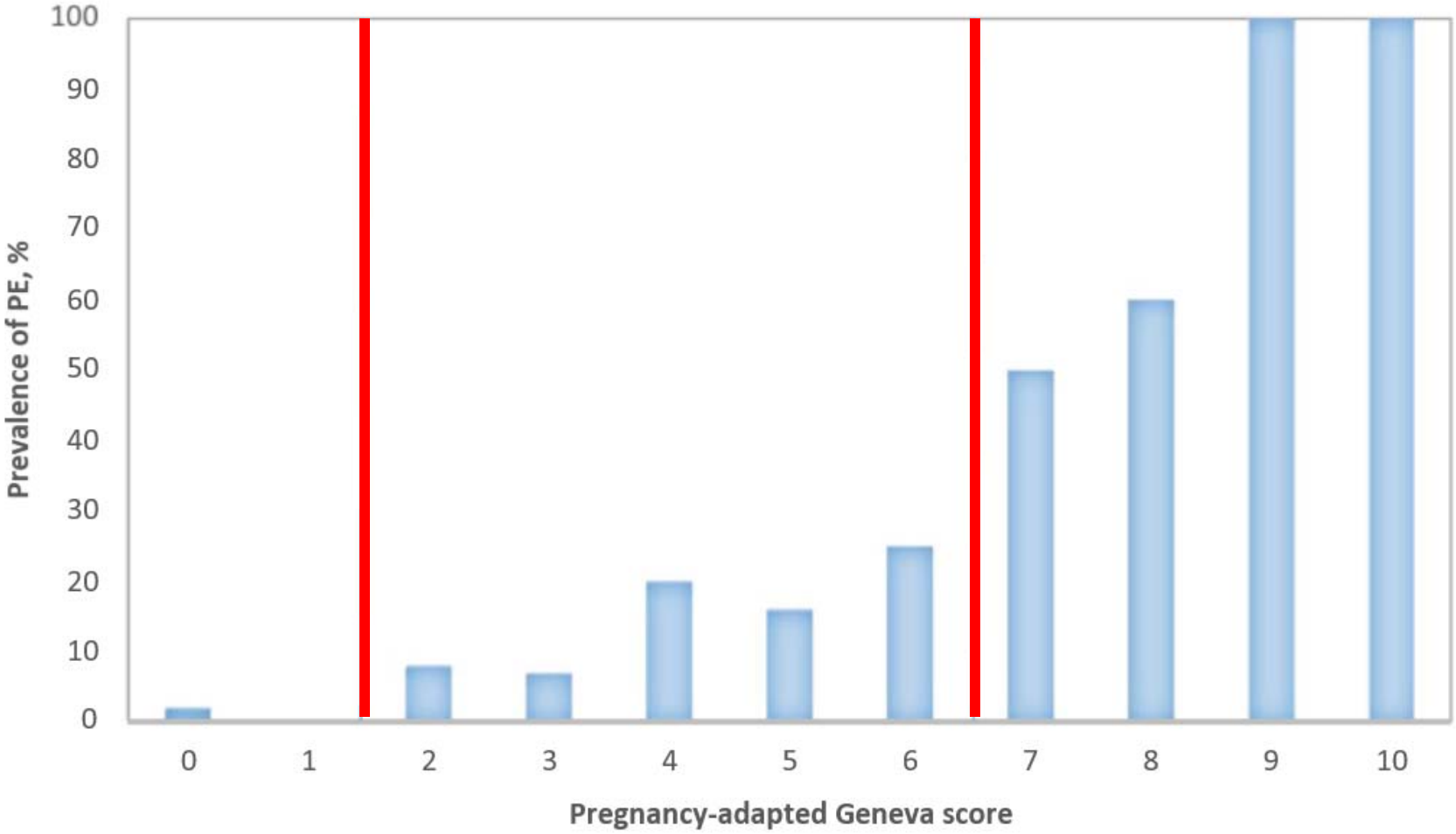
Grossesse 2021 (PAG Study)



Doppler membres inférieurs

Non invasif: Valable SS + ou EDU +

Si positif, confirmation par écho formelle et on traite l'EP!

Si négatif, on continue

Cartographie V/Q

Exposition acceptable

Résultat plus souvent concluant

Si non diagnostique: Doppler M. inf.

Angioscan pulmonaire

Diminution des radiations pour le fœtus

Augmentation de l’exposition pour les seins

Sous optimal dans 5 – 10% des cas, même pire chez les femmes enceintes

Trop sensible?

[Pulmonary Vascular Original Research]

CHEST

Comparison of Guidelines for Evaluation of Suspected Pulmonary Embolism in Pregnancy

A Cost-effectiveness Analysis

Check for updates

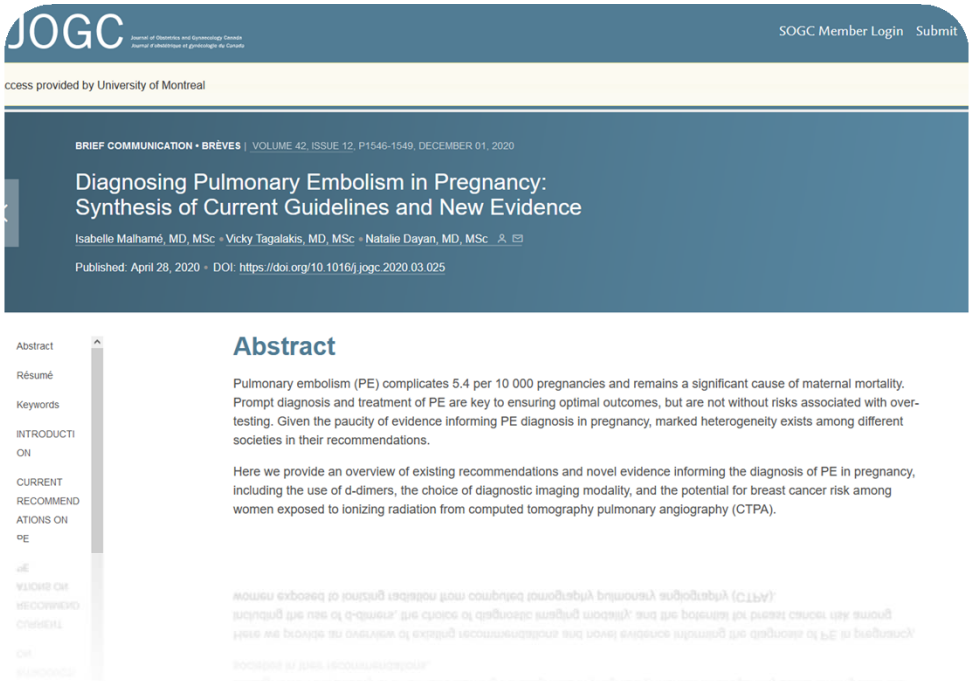
John Austin McCandlish, BS; Chinara Feizullayeva, BA; Alex C. Spyropoulos, MD; Paul P. Cronin, MD; Jason J. Naidich, MD; Benjamin Brenner, MD; Thomas McGinn, MD, MPH; Pina C. Sanelli, MD, MPH; and Stuart L. Cohen, MD, MPH

The ATS-STR guidelines for diagnosis of suspected PE in pregnancy are cost-effective and generate better expected health outcomes than guidelines proposed by other medical societies.

McCandlish JA, et al. Chest. 2022;161(6):1628-41

Guide de pratique des sociétés nationales	Année	D-Dimères
American Thoracic Society and Society of Thoracic Radiology	2011	Non
Australian Society of Thrombosis and Haemostasis and the Society of Obstetric Medicine of Australia and New Zealand	2012	Non
European Society of Cardiology	2019	**Oui pour risque non élevé**
Working Group in Women's Health of the Society of thrombosis and Haemostasis (**Allemagne Autriche et Suisse**)	2016	**Oui pour toutes**
Royal College of Obstetricians and Gynaecologists (**Royaume-Uni**)	2020	Non
Society of Obstetricians and Gynaecologists of **Canada** **Revision 2020**	2014 2020	Non **Oui**

McCandlish JA, et al. Chest. 2022;161(6):1628-41



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BRIEF COMMUNICATION • BRÈVES | VOLUME 42, ISSUE 12, P1546-1549, DECEMBER 01, 2020

Diagnosing Pulmonary Embolism in Pregnancy: Synthesis of Current Guidelines and New Evidence

Isabelle Malhamé, MD, MSc • Vicky Tagalakis, MD, MSc • Natalie Dayan, MD, MSc

Published: April 28, 2020 • DOI: https://doi.org/10.1016/j.jogc.2020.03.025

Abstract

Résumé

Keywords

INTRODUCTION

CURRENT RECOMMENDATIONS ON PE

Abstract

Pulmonary embolism (PE) complicates 5.4 per 10 000 pregnancies and remains a significant cause of maternal mortality. Prompt diagnosis and treatment of PE are key to ensuring optimal outcomes, but are not without risks associated with over-testing. Given the paucity of evidence informing PE diagnosis in pregnancy, marked heterogeneity exists among different societies in their recommendations.

Here we provide an overview of existing recommendations and novel evidence informing the diagnosis of PE in pregnancy, including the use of d-dimers, the choice of diagnostic imaging modality, and the potential for breast cancer risk among women exposed to ionizing radiation from computed tomography pulmonary angiography (CTPA).

Novel evidence **supports the use of diagnostic algorithms** including **the use of D-dimers** as safe and effective strategies to identify women who require diagnostic imaging for PE.

CTPA and VQ scan confer a similar and acceptably low risk of harm to the fetus and do not appear to be associated with any increased risk of breast cancer in the mother in the short term.

Malhamé I, et al. JOGC. 2020;42(12):1546-9.

En conclusion

Probabilité pré test et D-Dimères
Doppler membres inférieurs
Scintigraphie V/Q
Angioscan pulmonaire
HBPM per investigation

D-Dimère et COVID-19

COVID-19

Association Between Pulmonary Embolism and COVID-19 in Emergency Department Patients Undergoing Computed Tomography Pulmonary Angiogram: The PEPCOV International Retrospective Study

Yonathan Freund, MD, PhD[1,2], Marie Drogrey, MD[2], Òscar Miró, MD, PhD[3], Alessio Marra, MD[4], Anne-Laure Féral-Pierssens, MD, PhD[5,6], Andrea Penaloza, PD, PhD[7], Barbara A. Lara Hernandez, MD[8], Sebastien Beaune, MD, PhD[9], Judith Gorlicki, MD[10,11], Prabakar Vaittinada Ayar, MD[12,13,14], Jennifer Truchot, MD, PhD[15], Barbara Pena, MD[16], Alfons Aguirre, MD, PhD[17], Florent Fémy, MD[18,19], Nicolas Javaud, MD, PhD[20], Anthony Chauvin, Md, PhD[21,22], Tahar Chouihed, MD, PhD[23,24], Emmanuel Montassier, PD, PhD[25,26], Pierre-Géraud Claret, MD, PhD[27], Céline Occelli, MD[28,29], Mélanie Roussel, MD[30], Fabien Brigant, MD[31], Sami Ellouze, MD, PhD[32], Pierrick Le Borgne, MD[33,34], Said Laribi, MD, PhD[35], Tabassome Simon, MD, PhD[1,36], Olivier Lucidarme, MD, PhD[1,37], Marine Cachanado, MsC[38], and Ben Bloom, MD, PhD[39]
the IMPROVING EMERGENCY CARE FHU Collaborators

Freund Y, et al. The PEPCOV International Retrospective Study. Acad Emerg Med. 2020;27(9)

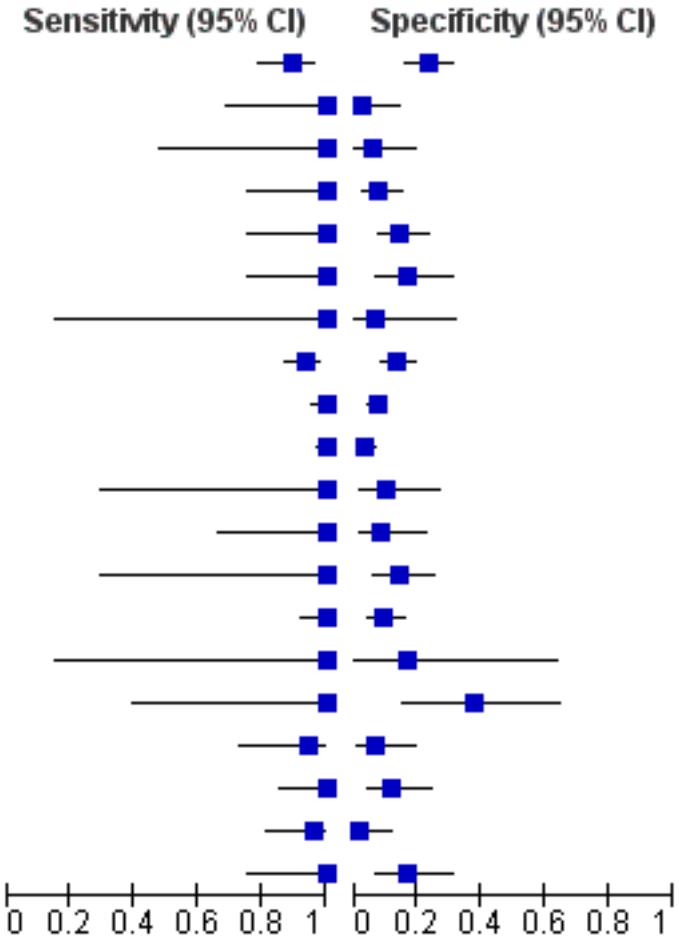
2022: COVID-19 et embolie pulmonaire

D-Dimers to exclude thromboembolism in patients presenting to emergency department with COVID19: A Patient Data Diagnostic Test Accuracy Meta-analysis

La Rochelle Pierre, Chauny Jean-Marc, Daoust Raoul et Cournoyer Alexis

2021 08 14

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Baccellieri 2020	51	102	6	31	0.89 [0.78, 0.96]	0.23 [0.16, 0.31]
Dua 2020	10	34	0	1	1.00 [0.69, 1.00]	0.03 [0.00, 0.15]
Gervaise 2020	5	32	0	2	1.00 [0.48, 1.00]	0.06 [0.01, 0.20]
Hammer 2020	13	75	0	6	1.00 [0.75, 1.00]	0.07 [0.03, 0.15]
Jevnikar 2021	13	73	0	12	1.00 [0.75, 1.00]	0.14 [0.08, 0.23]
Kampouri 2020	13	35	0	7	1.00 [0.75, 1.00]	0.17 [0.07, 0.31]
Le Jeune 2020	2	14	0	1	1.00 [0.16, 1.00]	0.07 [0.00, 0.32]
Loffi 2021	90	151	6	23	0.94 [0.87, 0.98]	0.13 [0.09, 0.19]
Mikhjian 2021	79	321	0	26	1.00 [0.95, 1.00]	0.07 [0.05, 0.11]
Miro 2020	127	217	0	8	1.00 [0.97, 1.00]	0.04 [0.02, 0.07]
Moosavi 2020	3	26	0	3	1.00 [0.29, 1.00]	0.10 [0.02, 0.27]
Mouhat 2020	9	32	0	3	1.00 [0.66, 1.00]	0.09 [0.02, 0.23]
Pizzi 2020	3	49	0	8	1.00 [0.29, 1.00]	0.14 [0.06, 0.26]
Planquette 2021	46	91	0	9	1.00 [0.92, 1.00]	0.09 [0.04, 0.16]
Polo 2021	2	5	0	1	1.00 [0.16, 1.00]	0.17 [0.00, 0.64]
Siso-Almirall 2020	4	10	0	6	1.00 [0.40, 1.00]	0.38 [0.15, 0.65]
Stoneham 2020	17	39	1	3	0.94 [0.73, 1.00]	0.07 [0.01, 0.19]
Ventura 2020	24	44	0	6	1.00 [0.86, 1.00]	0.12 [0.05, 0.24]
Whyte 2020	27	43	1	1	0.96 [0.82, 1.00]	0.02 [0.00, 0.12]
Zermatten 2020	13	35	0	7	1.00 [0.75, 1.00]	0.17 [0.07, 0.31]



La Rochelle Pierre, et al. D-Dimers to exclude thromboembolism in patients presenting to emergency department with COVID19: A diagnostic test metaanalysis . 2021 08 14

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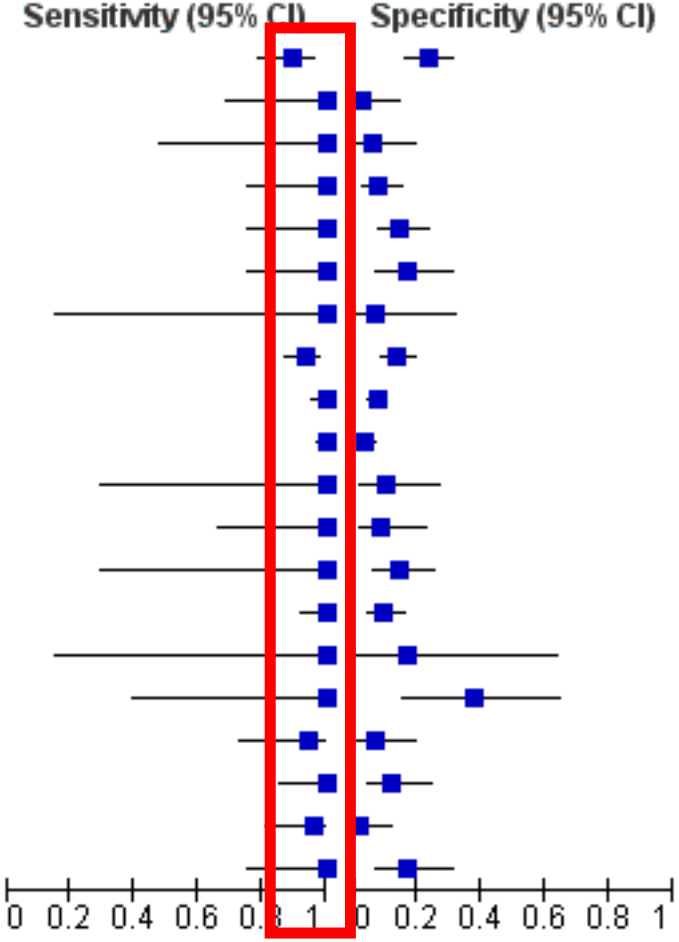
Mikhjian 2021	79	321	0	26	1.00 [0.95, 1.00]	0.07 [0.05, 0.11]
Miro 2020	127	217	0	8	1.00 [0.97, 1.00]	0.04 [0.02, 0.07]
Moosavi 2020	3	26	0	3	1.00 [0.29, 1.00]	0.10 [0.02, 0.27]
Mouhat 2020	9	32	0	3	1.00 [0.66, 1.00]	0.09 [0.02, 0.23]
Pizzi 2020	3	49	0	8	1.00 [0.29, 1.00]	0.14 [0.06, 0.26]
Planquette 2021	46	91	0	9	1.00 [0.92, 1.00]	0.09 [0.04, 0.16]
Polo 2021	2	5	0	1	1.00 [0.16, 1.00]	0.17 [0.00, 0.64]
Siso-Almirall 2020	4	10	0	6	1.00 [0.40, 1.00]	0.38 [0.15, 0.65]
Stoneham 2020	17	39	1	3	0.94 [0.73, 1.00]	0.07 [0.01, 0.19]
Ventura 2020	24	44	0	6	1.00 [0.86, 1.00]	0.12 [0.05, 0.24]
Whyte 2020	27	43	1	1	0.96 [0.82, 1.00]	0.02 [0.00, 0.12]
Zermatten 2020	13	35	0	7	1.00 [0.75, 1.00]	0.17 [0.07, 0.31]



La Rochelle Pierre, et al. D-Dimers to exclude thromboembolism in patients presenting to emergency department with COVID19: A diagnostic test metaanalysis . 2021 08 14

D-Dimers to exclude thromboembolism in patients presenting to emergency department with COVID19: A diagnostic test metaanalysis . La Rochelle Pierre, Chauny Jean-Marc, Raoul Daoust et Alexis Cournoyer 2021 08 14

Seuil DD (mcg/L)	Nombre d'études *	Nombre de METV/ patients (Prévalence %)	Sensibilité	$IC_{95\%}$	Spécificité	$IC_{95\%}$
Tous	29	894/3394 (26,3%	94,4%	91,5% – 96,3%	27,6%	20,7% - 35,8%
500	20	565/2157 (26,2%)	98,6%	95.8% - 99,6%	10,1%	7,7% - 13,0%
Ajusté pour l'âge (10x l'âge pour les plus de 50 ans)	12	195/888 (22,0%)	95,6%	89,2% - 98,3%	17,0%	11,5% -24,4%
1000	23	589/2096 (28,1%)	88.4%	83,9% - 91,8%	37,2%	31,6% - 43,2%

La Rochelle Pierre, Chauny Jean-Marc, Daoust Raoul et Cournoyer Alexis: D-Dimers to exclude thromboembolism in patients presenting to emergency department with COVID19: A diagnostic test metaanalysis . 2021 08 14

European Radiology
https://doi.org/10.1007/s00330-021-08377-9

CHEST

What level of D-dimers can safely exclude pulmonary embolism in COVID-19 patients presenting to the emergency department?

Marie-Pierre Revel[1,2] · Nathanael Beeker[1,3] · Raphael Porcher[1,4] · Léa Jilet[3] · Laure Fournier[1,5] · Bastien Rance[1,6] · Guillaume Chassagnon[1,2] · Michaela Fontenay[1,7,8] · Olivier Sanchez[1,9,10] · on behalf of the AP-HP /Universities/ Inserm COVID-19 research collaboration, AP-HP Covid CDR Initiative

Conclusion: The same D-Dimer thresholds as those validated in non-COVID outpatients should be used to safely rule out PE.

Revel MP, Eur Radiol. 2022:1-9. Epub 2022/01/08

D-Dimères et dyspnée chronique

JAMA. 2021 Oct 5; 326(13): 1277–1285.
Published online 2021 Oct 5. doi: 10.1001/jama.2021.14846: 10.1001/jama.2021.14846

PMCID: PMC8493436
PMID: 34609451

Effect of a Pulmonary Embolism Diagnostic Strategy on Clinical Outcomes in Patients Hospitalized for COPD Exacerbation

A Randomized Clinical Trial

David Jiménez, MD, PhD,[1,2,3] Alvar Agustí, MD, PhD,[4] Eva Tabernero, MD,[5] Luis Jara-Palomares, MD, PhD,[6] Ascensión Hernando, MD, PhD,[7] Pedro Ruiz-Artacho, MD, PhD,[3,8] Gregorio Pérez-Peñate, MD, PhD,[9] Agustina Rivas-Guerrero, MD,[10] María Jesús Rodríguez-Nieto, MD, PhD,[3,11] Aitor Ballaz, MD,[12] Ramón Agüero, MD,[13] Sonia Jiménez, MD,[14] Myriam Calle-Rubio, MD, PhD,[15] Raquel López-Reyes, MD,[16] Pedro Marcos-Rodríguez, MD,[17] Deisy Barrios, MD, PhD,[1] Carmen Rodríguez, MD,[1] Alfonso Muriel, PhD,[18] Laurent Bertoletti, MD, PhD,[19] Francis Couturaud, MD, PhD,[20] Menno Huisman, MD, PhD,[21] José Luis Lobo, MD,[10] Roger D. Yusen, MD,[22] Behnood Bikdeli, MD, MS,[23,24,25] Manuel Monreal, MD, PhD,[3,26] and Remedios Otero, MD, PhD[3,6], for the SLICE Trial Group

"Among patients hospitalized for an exacerbation of COPD, the addition of an active strategy for the diagnosis of PE to usual care, compared with usual care alone, **did not significantly improve a composite health outcome.**"

"Use of liberal screening (as in SLICE) in a clinical setting could lead to **over-diagnosis**, including inconclusive diagnoses and findings of uncertain importance, with **negative consequences for patient management and safety**."

Jiménez D, et al. The Slice Trial. JAMA. 2021;326(13):1277-85.

Safety and Efficiency of Diagnostic Strategies for Ruling Out Pulmonary Embolism in Clinically Relevant Patient Subgroups : A Systematic Review and Individual-Patient Data Meta-analysis

- 16 études, 1995 à 2021. 20 553 patients
- Older or cancer patients:
- "Efficiency improved considerably in these subgroups when pretest probability–dependent D-dimer thresholds were applied"

From an efficiency perspective, this individual patient data meta-analysis supports application of adapted D-dimer thresholds.

Stals MAM et al. Ann Intern Med Epub 2021/12/15

Imagerie pour l’EP?

Modalité	Force	Limite	Radiation
Angio CT	24/7 et rapide Précision Multiple validations Peu de non concluant Diagnostic alternatif	Radiation et produit de contraste Atteinte rénale Trop accessible Découverte fortuite	3- 10 mSv Significatif pour le tissus mammaire des jeunes patientes
V/Q scan Planaire	Très peu de contrindication Peu couteux Très bien validé	Disponibilité diminuée Variabilité interobservateur Résultat en degré de probabilité 50% non diagnostique Pas de diagnostic alternatif	2 mSv
V/Q SPECT	Très peu de contrindication < 3% études non diagnostiques Haute valeur diagnostique Interprétation binaire (PE vs No PE)	Variabilité des techniques et des critères Pas de diagnostic alternatif	2 mSv
Angiographie	Gold Standart historique	Invasive Non disponible	10-20 mSV

Résumé des études diagnostiques pour l'embolie pulmonaire

TEST	Patients (études)	Sensibilité	Spécificité	Qualité des évidences
Angio CT	3 929 (15)	0,93 (0,88 – 0,96)	0,98 (0,96 – 0,99)	Moyenne
D-Dimères	20 568 (30)	0,97 (0,96 – 0,98)	0,39 (0,36 – 0,43)	Moyenne
D-D ajustée pour l'âge	2 885 (1)	0,99 (0,98 – 1,00)	0,47 (0,45 – 0,49)	Haute
Doppler Proximal	1 715 (7)	0,49 (0,31 – 0,66)	0,96 (0,95 – 0,98)	Faible
V/Q + = haute prob. (vs tous les autres)	3 994 (13)	0,58 (0,50 – 0,66)	0,98 (0,96 – 0,99)	Moyenne
V/Q - = Normal (vs touts les autres)	3 994 (13)	0,98 (0,95 – 0,99)	0,36 (0,27-0,45)	Moyenne
V/Q + = haute prob. V/Q - = Normal (vs touts les autres)	3 994 (13)	0,96 (0,91 – 0,98)	0,95 (0,89 – 0,98)	Haute

https://guidelines.gradepro.org/profile/2d575b1d-8e36-43db-8805-713732e1508a (Consulté octobre 2021)

Spécificité de l'angioscan

937 angioscans 174 EP (18,6%)

Revision par 3 radiologistes experts

Si au moins 1 d'accord: Dg = EP

Si les 3 pas d'accord: Dg = PAS D'EP

45 des 174 (25,9%) n'avaient pas d'EP
Spécificité 74,1%

Hutchinson BD, et al. Overdiagnosis of Pulmonary Embolism by Pulmonary CT Angiography. American Journal of Roentgenology. 2015;205(2):271-7.

Impact du diagnostic d'EP

Anticoagulation (case fatality rate DOACS 9,7%)

Assurances

Revisites

Anxiété

Dépression

SSPT (PTSD)

Pensées suicidaires

Tran A, Redley M, de Wit K. : The psychological impact of pulmonary embolism: A mixed-methods study. **Res Pract Thromb Haemost. 2021;5(2):301-7.**

Khan F, et al. : Long-Term Risk for Major Bleeding During Extended Oral Anticoagulant Therapy for First Unprovoked Venous Thromboembolism : A Systematic Review and Meta-analysis. **Ann Intern Med.**[47] **2021.**

DD et anticoagulants

Patients exclus des études:

Étude	Critère exclusion
Wells 2001	Anticoagulant therapy for more than 24 hours
Kline (PERC) 2008	INCLUS 543 patients anticoagulés
Righini 2014 (Adjust-PE)	they were receiving anticoagulant therapy for another indication
van der Hulle 2017 (Years Study)	treatment with therapeutic doses of anticoagulants initiated 24 hours or more before
Kearon et de Wit 2019 (PEGed)	had received full-dose anticoagulant therapy for 24 hours
Roy 2021 (4-PEPS)	
• Roy (EMDEPU)2006	INCLUS
• Kline (PERC) 2008	INCLUS
• Roy 2009	INCLUS
• Righini 2008	Exclus
• Penaloza 2017	had curative anticoagulant therapy in progress for more than 2 days

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Letter to the Editors-in-Chief

Use of D-dimer for the exclusion of new pulmonary embolism in anticoagulated patients: A multicenter retrospective study

ARTICLE INFO

Keywords
Venous thromboembolism
Pulmonary embolism
Recurrence
D-dimer
Direct oral
Anticoagulants

Age adjusted DD: Sensibilité = 100%, LR neg < 0,1 et une prévalence de 4%

Beaudoin É, et al. Thrombosis Research. 2022;212:19-21.

Un patient anticoagulé est-il bien anticoagulé?

- Interaction
- Posologie
- 1,2% des EP
- Changement récent de la médication

Liu, M. Y, et al. (2018). Acute Pulmonary Embolism in Emergency Department Patients Despite Therapeutic Anticoagulation. *Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health*, 19(3).

Canadian Journal of Emergency Medicine
https://doi.org/10.1007/s43678-021-00260-2

JUST THE FACTS

Check for updates

Just the facts: testing patients with suspected pulmonary embolism

Kerstin de Wit[1,2,5] · Oksana Motalo[3] · Shreyash Dalmia[4]

Received: 26 October 2021 / Accepted: 28 December 2021

Keywords Pulmonary embolism · Diagnosis

TESTING FOR PULMONARY EMBOLISM IN THE EMERGENCY DEPARTMENT

- Prepare for how you will test emergency patients for PE
- Know your hospital D-dimer assay and manufacturer recommended cutoff: if the cutoff is not 500, you may be restricted to the first PE testing strategy
- Choose one PE testing strategy and use it for all patients

Kerstin de Wit, et al. Just the facts: Testing patients with suspected pulmonary embolism. CJEM. Epub 2022/01/14.

Option 1: Wells "Unlikely" et D-Dimère inférieur au seuil recommandé

Option 2: Wells "Unlikely" et D-Dimère inférieur au seuil ajusté pour l'âge

Option 3: Le YEARS Score

Option 4: Wells "Unlikely« et D-Dimère inférieur au seuil ajusté à la probabilité clinique (PEGed ou 4PEPS)

Décision partagée

Patient values and preferences in pulmonary embolism testing in the emergency department

Patient satisfaction comes from addressing their primary concern

- Symptomatic relief (pain and shortness of breath)
- Finding a diagnosis
- Receiving tests
- Rapidly progressing through the emergency department

Swarup V, Soomro A, Abdulla S, de Wit K. Patient values and preferences in pulmonary embolism testing in the emergency department. Acad Emerg Med. 2021. Oct 18. doi: 10.1111/acem.14400.

Preference for imaging over clinical examinations

Perception of highly accurate CT scans

Clinical examination is insufficient when ruling out a clot

Swarup V, et al. Acad Emerg Med. 2021 Oct 18 doi: 10.1111/acem.14400. Online ahead of print.

Expect 100% confidence from their physician

Most patients said they would accept only 100% certainty
Multiple tests suggested the physician had checked everything
Willing to seek a second opinion if expectations are not met

Swarup V, et al. Acad Emerg Med. 2021 Oct 18 doi: 10.1111/acem.14400. Online ahead of print.

Individualized care throughout their entire ED visit

Direct physician communication
Case-specific testing
Cognitive reassurance

"Testing should be different, because I'm different"

Swarup V, et al. Acad Emerg Med. 2021 Oct 18 doi: 10.1111/acem.14400. Online ahead of print.

Do physicians contribute to psychological distress after venous thrombosis?

Anxiété maximale

Détresse psychologique

Information partielle
Jargon médical
Ton et discours alarmiste
Manifester la crainte avec le non verbal
Absence de rassurance

Évaluation rapide par un expert
Conversation calme
S'assoir pour l'entrevue
Écoute active
Demander ce qui inquiète le patient
Donner une information complémetaire
(écrit, site internet)

Confiance et rassurance

Réconfort maximal

K De Wit Research and Practice in Thrombosis and Haemostasis, Volume: 6, Issue: 1, 23 January 2022, DOI: (10.1002/rth2.12651) 2022;6(1):e12651