Top 10 des études en médecine vasculaire 2021

Luc Lanthier, MD, MSc, FRCPC, FACP
Interniste général, professeur titulaire
CIUSSSE-CHUS, FMSS, Sherbrooke
19 novembre 2021
Luc.Lanthier@USherbrooke.ca

Conflits d'intérêt

Aucun

Objectifs de la présentation

- Citer les résultats d'études pertinentes en médecine vasculaire en 2020-2021.
- Intégrer dans sa pratique de nouvelles approches thérapeutiques fondées sur des données récemment publiées.
- Critiquer les études récentes en médecine vasculaire.

Mortality with Paclitaxel-Coated Devices in Peripheral Artery Disease

Nordanstig J, James S, Andersson M et coll.

N Engl J Med 2020;383:2538-46.

Table 2. All-Cause Mortality during Entire Follow-up Period and during First Postprocedural Year.

Variable	Drug-Coated Device (N=1149)	Uncoated Device (N=1140)	Hazard Ratio (95% CI)*
	no./total no. (%)		
Deaths at 1 yr of follow-up			
Overall population	117/1149 (10.2)	113/1140 (9.9)	1.03 (0.77–1.37)
Patients with chronic limb-threatening ischemia	107/745 (14.4)	105/735 (14.3)	1.00 (0.75–1.35)
Patients with intermittent claudication	10/404 (2.5)	8/405 (2.0)	1.26 (0.49–3.24)
Deaths during entire follow-up period			
Overall population	293/1149 (25.5)	281/1140 (24.6)	1.06 (0.92–1.22)
Patients with chronic limb-threatening ischemia	249/745 (33.4)	243/735 (33.1)	1.04 (0.90–1.21)
Patients with intermittent claudication	44/404 (10.9)	38/405 (9.4)	1.18 (0.72–1.93)

* The confidence intervals have not been adjusted for multiplicity and cannot be used to infer definitive treatment effects.

Impact clinique : chez les sujets avec MAP recevant un dispositif avec ou sans imprégnation de paclitaxel, il n'y a pas de différence de mortalité à 1 an et au suivi.

Research

JAMA Internal Medicine | Original Investigation

Longitudinal Assessment of Safety of Femoropopliteal Endovascular Treatment With Paclitaxel-Coated Devices Among Medicare Beneficiaries
The SAFE-PAD Study

Eric A. Secemsky, MD, MSc; Changyu Shen, PhD; Marc Schermerhorn, MD; Robert W. Yeh, MD

IMPORTANCE Paclitaxel-coated peripheral devices have been associated with increased mortality, yet this harm signal has not been replicated outside of meta-analyses of small trials.

OBJECTIVE To provide a longitudinal assessment of the safety of femoropopliteal endovascular treatment with peripheral drug-coated devices (DCDs) among Medicare beneficiaries.

CONCLUSIONS AND RELEVANCE In this initial report from the SAFE-PAD cohort study, DCDs were found to be noninferior to NCDCs in respect to mortality through a median follow-up of 2.72 years. This finding remained robust in sensitivity analyses and was consistent across prespecified subgroups.

Editorial page 1041

Supplemental content

JAMA Intern Med. 2021;181:1071-80.

Prevalence of Pulmonary Embolism Among Patients With COPD Hospitalized With Acutely Worsening Respiratory Symptoms

Couturaud F, Bertoletti L, Pastre J et coll.

JAMA. 2021;325:59-68.

Table 3. Prevalence of Pulmonary Embolism (With or Without Deep Vein Thrombosis) and Isolated Deep Vein Thrombosis at Inclusion and Thromboembolic Events Rates During 3-Month Follow-up

	At admission				At 3 mo		
	No./total (%) [95% CI]				No./total (%) [95% CI]		
	Pulmonary embolism	Isolated deep vein thrombosis	Venous thromboembolism (deep vein thrombosis and/or pulmonary embolism)	Pulmonary embolism case-fatality rate, No./total (%)	Symptomatic pulmonary embolism[a]	Overall mortality	Pulmonary embolism case-fatality rate, No./total (%)
All patients	44/740 (5.9) [4.5-7.9]	10/740 (1.4) [0.7-2.5]	54/740 (7.3) [5.6-9.4]	2/44 (5)	5/670 (0.7) [0.3-1.7]	50/740 (6.8) [5.2-8.8]	3/5 (60)
Pulmonary embolism[b]							
Suspected	30/299 (10.0) [7.1-14.0]	5/299 (1.7) [0.7-3.9]	35/299 (11.7) [8.6-15.9]	1/30 (3)	2/257 (0.8) [0.2-2.7]	25/299 (8.4) [5.7-12.1]	1/2 (50)
Not suspected	14/441 (3.2) [1.9-5.3]	5/441 (1.1) [0.5-2.6]	19/441 (4.3) [2.8-6.6]	1/14 (7)	3/413 (0.7) [0.2-2.1]	25/441 (5.7) [3.9-8.3]	2/3 (66)
Likelihood of an alternative diagnosis to pulmonary embolism[c]							
Less likely	22/173 (12.7) [8.6-18.5]	4/173 (2.3) [0.9-6.8]	26/173 (15.0) [10.5-21.4]	1/22 (5)	1/143 (0.7) [0.1-3.8]	14/173 (8.1) [4.9-13.1]	1/2 (50)
More likely	22/567 (3.9) [2.6-5.8]	6/567 (1.1) [0.5-2.3]	28/567 (4.9) [3.4-7.1]	1/22 (5)	4/527 (0.8) [0.2-2.1]	36/567 (6.4) [4.6-8.7]	2/3 (66)

[a] Fourteen patients who were in the non–venous thromboembolism group who were receiving anticoagulant treatment for reasons other than adjudicated venous thromboembolism and 2 who were lost-to follow-up were excluded from analysis at 3 months.

[b] Suspicion of pulmonary embolism was assessed by a senior physician once the patient arrived at the emergency department based on medical history, physical examination, and physician's judgment and before any diagnostic tests for pulmonary embolism were ordered.

[c] Assessment of an alternative diagnosis to pulmonary embolism more or less likely was performed by a senior physician once the patient arrived at the emergency department based on medical history, physical examination, and physician's judgment and before any diagnostic tests for pulmonary embolism were ordered.

Impact clinique : chez les sujets hospitalisés pour EAMPOC, la prévalence d'embolie pulmonaire est d'environ 6 %.

JAMA | Original Investigation

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

David Jiménez, MD, PhD; Alvar Agustí, MD, PhD; Eva Tabernero, MD; Luis Jara-Palomares, MD, PhD; Ascensión Hernando, MD, PhD; Pedro Ruiz-Artacho, MD, PhD; Gregorio Pérez-Peñate, MD, PhD; Agustina Rivas-Guerrero, MD; María Jesús Rodríguez-Nieto, MD, PhD; Aitor Ballaz, MD; Ramón Agüero, MD; Sonia Jiménez, MD; Myriam Calle-Rubio, MD, PhD; Raquel López-Reyes, MD; Pedro Marcos-Rodríguez, MD; Deisy Barrios, MD, PhD; Carmen Rodríguez, MD; Alfonso Muriel, PhD; Laurent Bertoletti, MD, PhD; Francis Couturaud, MD, PhD; Menno Huisman, MD, PhD; José Luis Lobo, MD; Roger D. Yusen, MD; Behnood Bikdeli, MD, MS; Manuel Monreal, MD, PhD; Remedios Otero, MD, PhD; for the SLICE Trial Group

IMPORTANCE Active search for pulmonary embolism (PE) may improve outcomes in patients hospitalized for exacerbations of chronic obstructive pulmonary disease (COPD).

OBJECTIVE To compare usual care plus an active strategy for diagnosing PE with usual care alone in patients hospitalized for COPD exacerbation.

CONCLUSIONS AND RELEVANCE 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. The study may not have had adequate power to assess individual components of the composite outcome.

Supplemental content

CME Quiz at jamacmelookup.com and CME Questions page 1323

JAMA. 2021;326:1277-85.

Effect of Low-Intensity vs High-Intensity Home-Based Walking Exercise on Walk Distance in Patients With Peripheral Artery Disease: The LITE Randomized Clinical Trial

McDermott MM, Spring B, Tian L et coll.

JAMA. 2021;325(13):1266-76.

	Low-intensity walking exercise			High-intensity walking exercise			Nonexercise control			Between-group change[a]		
	Mean (SD)[b]		Within-group change, mean (95% CI)	Mean (SD)[b]		Within-group change, mean (95% CI)	Mean (SD)[b]		Within-group change, mean (95% CI)	Low-intensity vs high-intensity walking exercise	Low-intensity walking exercise vs nonexercise control	High-intensity walking exercise vs nonexercise control
	Baseline	12-mo follow-up		Baseline	12-mo Follow-up		Baseline	12-mo follow-up				
Primary outcome												
6-min walk distance, m[c]	332.1 (95.8)	327.5 (109.3)	−6.4 (−21.5 to 8.8)	338.1 (102.6)	371.2 (116.8)	34.5 (20.1 to 48.9)	328.1 (91.0)	317.5 (98.9)	−15.1 (−35.8 to 5.7)	−40.9 (−61.7 to −20.0)	8.7 (−17.0 to 34.4)	49.6 (24.3 to 74.9)[d]
No.	116	93		124	104		65	48				
P value			.34			<.001			.10	<.001	.44	<.001

Impact clinique : chez les pts avec MAP, un programme de marche à domicile (PMD) de faible intensité est moins efficace qu'un PMD à haute intensité à 12 mois.

Thrombotic Thrombocytopenia after ChAdOx1 nCov-19 Vaccination

Greinacher A, Thiele T, Warkentin TE et coll.

N Engl J Med. 2021;384(22):2092-2101.

Table 2. Clinical and Laboratory Summary of 11 Patients with Available Clinical Information.*

Variable	Patient Number										
	1	2	3	4	5	6	7	8	9	10	11
Platelet nadir (per mm^3)	13,000	107,000	60,000	9,000	23,000	75,000	29,000	16,000	13,000	8,000	NA because of death
CVT	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Pending†
Splanchnic-vein thrombosis‡	Yes	No	No	No	Yes	No	No	No	No	Yes	No
Pulmonary embolism	Yes	Yes	No	No	Yes	No	No	No	No	No	No
Other thrombosis	Aortoiliac	No	No	No	Right intraventricular, iliofemoral vein, IVC	No	No	Widespread microvascular (brain, lungs, kidneys)§	Multiple organ thrombi§	No	Cerebral hemorrhage†
Symptom onset (no. of days after vaccination)	5	6	9	7	13	7	8	8	16	11	12¶
INR peak	1.40	1.12	NA	1.66	1.25	1.05	1.34	NA	1.70	NA	NA
PTT peak (sec)	41.6	29.0	NA	46.6	64.8	23.0	45.0	NA	46.1	NA	NA
D-dimer peak (mg/liter)	142.0	1.8	13.0	NA	NA	2.6	>33.0	NA	21.0	>35.0	NA
Fibrinogen nadir (mg/dl)	78	568	NA	NA	173	NA	210	NA	40	80	NA
PF4–heparin ELISA (optical density)	3.16	3.08	3.50	3.40	1.20	NA	NA	2.02	3.51	2.35	2.16
PF4-dependent platelet-activation assay	Pos	Pos‖	Pos	Pos	Pos	NA	NA	Pos	Pos	Pos	Pos
Heparin treatment	Yes	LMWH**	Unknown	Yes	Yes	Unknown	Yes	No	No	No	No
Other medical condition	No	No	No	CND	VWD-I; FVL ACL-Abs	No	No	No	No	No	Unknown
Outcome	Fatal	Recovering	Unknown	Fatal	Recovering	Recovering	Recovering	Fatal	Fatal	Fatal	Fatal

Impact clinique : le vaccin ChAdOx1 peut rarement entrainer une TIPIV médiée par des Ac activés par les plaquettes contre le PF4, mimant une thrombocytopénie induite par l'héparine.

Autres références sur la TIPIV

- Pavord S, Scully M, Hunt BJ, et al. Clinical Features of Vaccine-Induced Immune Thrombocytopenia and Thrombosis. N Engl J Med. 2021;385(18):1680-89.
- Schultz NH, Sørvoll IH, Michelsen AE, et al. Thrombosis and Thrombocytopenia after ChAdOx1 nCoV-19 Vaccination. N Engl J Med. 2021;384(22):2124-2130.
- Scully M, Singh D, Lown R, et al. Pathologic Antibodies to Platelet Factor 4 after ChAdOx1 nCoV-19 Vaccination. N Engl J Med. 2021;384(23):2202-2211.
- Vayne C, Rollin J, Gruel Y, et al. PF4 Immunoassays in Vaccine-Induced Thrombotic Thrombocytopenia. N Engl J Med. 2021;385(4):376-378.
- Patriquin CJ, Laroche V, Selby R, et al. Therapeutic Plasma Exchange in Vaccine-Induced Immune Thrombotic Thrombocytopenia. N Engl J Med. 2021;385(9):857-859.
- Bourguignon A, Arnold DM, Warkentin TE, et al. Adjunct Immune Globulin for Vaccine-Induced Immune Thrombotic Thrombocytopenia. N Engl J Med. 2021;385(8):720-728.
- (…)

Abelacimab for Prevention of Venous Thromboembolism

Verhamme P, Yi BA, Segers A et coll.

N Engl J Med. 2021;385:609-17.

Outcome	Abelacimab, 30 mg	Abelacimab, 75 mg	Abelacimab, 150 mg	Enoxaparin, 40 mg
Efficacy				
No. of patients evaluated	102	99	98	101
Primary efficacy outcome: venous thromboembolism†				
Any event — no. of patients (%)	13 (13)	5 (5)	4 (4)	22 (22)
Risk difference, abelacimab vs. enoxaparin — percentage points (95% CI)	−9.2 (−19.4 to 1.1)	−16.8 (−26.0 to −7.6)	−17.8 (−26.7 to −8.8)	NA
P value for superiority of abelacimab to enoxaparin	0.08	<0.001	<0.001	NA
Components of the primary efficacy outcome — no. (%)				
Symptomatic venous thromboembolism	0	0	0	1 (1)‡
Asymptomatic deep-vein thrombosis	13 (13)	5 (5)	4 (4)	21 (21)
Proximal deep-vein thrombosis	1 (1)	0	0	2 (2)
Distal deep-vein thrombosis	12 (12)	5 (5)	4 (4)	20 (20)‡
Extent of deep-vein thrombosis on venography — no.				
Confluent distal into proximal	1	0	0	2
Isolated proximal				
Large: ≥10 cm	0	0	0	0
Small: <10 cm	0	0	0	0
Isolated distal				
Extensive: ≥2 veins	2	0	2	8
Limited: <2 veins	10	5	2	12‡

Safety				
No. of patients evaluated	102	104§	99	104
Major or clinically relevant nonmajor bleeding				
From randomization until venography was completed				
Any event — no. of patients (%)	2 (2)	2 (2)	0	0
Risk difference, abelacimab vs. enoxaparin — percentage points (95% CI)	1.9 (–0.7 to 4.6)	1.9 (–0.7 to 4.5)	0	NA
Major bleeding — no. (%)	0	0	0	0
Clinically relevant nonmajor bleeding — no. (%)	2 (2)	2 (2)	0	0
From randomization through day 30 — no. (%)				
Any event	2 (2)	2 (2)¶	0	0
Major bleeding	0	1 (1)	0	0
Clinically relevant nonmajor bleeding	2 (2)	2 (2)	0	0
Receipt of blood transfusion through day 30 — no. (%)	6 (6)	8 (8)	9 (9)	7 (7)
Adverse events — no. of patients (%)				
Serious adverse event	1 (1)‖	3 (3)	1 (1)	0
≥1 Adverse event	15 (15)	16 (15)	15 (15)	13 (13)

Impact clinique : L'abelacimab, un inhibiteur du FXI, utilisé après une PTG élective, est efficace pour prévenir la MTE, et est associé à un faible risque de saignement.

Therapeutic Anticoagulation with Heparin in Noncritically Ill Patients with Covid-19

Lawler PR, Goligher EC, Berger JS et coll.

N Engl J Med. 2021;385:790-802.

Table 2. Primary Outcome of Organ Support–Free Days.*

Variable	Therapeutic-Dose Anticoagulation	Usual-Care Thromboprophylaxis	Adjusted Difference in Risk (95% Credible Interval)†	Adjusted Odds Ratio (95% Credible Interval)‡	Probability of Superiority of Therapeutic-Dose Anticoagulation
	no. of patients/total no. (%)		*percentage points*		%
Patients with moderate disease					
Overall group§	939/1171 (80.2)	801/1048 (76.4)	4.0 (0.5 to 7.2)	1.27 (1.03–1.58)	98.6
D-dimer cohort¶					
High level	264/339 (77.9)	210/291 (72.2)	5.1 (0.0 to 9.9)	1.31 (1.00–1.76)	97.3
Low level	463/570 (81.2)	403/505 (79.8)	3.0 (–1.2 to 6.3)	1.22 (0.93–1.57)	92.9
Unknown level	212/262 (80.9)	188/252 (74.6)	4.9 (0.00 to 9.9)	1.32 (1.00–1.86)	97.3

Table 3. Secondary Outcomes among All Patients with Moderate Disease.*

Outcome	Therapeutic-Dose Anticoagulation	Usual-Care Thromboprophylaxis	Adjusted Difference in Risk (95% Credible Interval)†	Adjusted Odds Ratio (95% Credible Interval)‡	Probability of Effect of Therapeutic-Dose Anticoagulation
	no. of patients/total no. (%)		*percentage points*		%
Survival until hospital discharge	1085/1171 (92.7)	962/1048 (91.8)	1.3 (–1.1 to 3.2)	1.21 (0.87 to 1.68)§	87.1¶
Survival without organ support at 28 days‖	932/1175 (79.3)	789/1046 (75.4)	4.5 (0.9 to 7.7)	1.30 (1.05 to 1.61)	99.1¶
Progression to intubation or death**	129/1181 (10.9)	127/1050 (12.1)	–1.9 (–4.1 to 0.7)	0.82 (0.63 to 1.07)	92.2¶
Major thrombotic event or death	94/1180 (8.0)	104/1046 (9.9)	–2.6 (–4.4 to –0.2)	0.72 (0.53 to 0.98)	98.0¶
Major thrombotic event	13/1180 (1.1)	22/1046 (2.1)			
Death in hospital	86/1180 (7.3)	86/1046 (8.2)			
Major bleeding	22/1180 (1.9)	9/1047 (0.9)	0.7 (–0.1 to 2.3)	1.80 (0.90 to 3.74)	95.5††

Impact clinique : chez les pts COVID non au SI, une stratégie d'anticoagulation thérapeutique initiale augmente la probabilité de survie sans support organique comparativement à une thromboprophylaxie usuelle

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 26, 2021 VOL. 385 NO. 9

Therapeutic Anticoagulation with Heparin in Critically Ill Patients with Covid-19

The REMAP-CAP, ACTIV-4a, and ATTACC Investigators*

N Engl J Med. 2021;385(9):777-89.

En se basant sur la documentation scientifique disponible, sur les consultations menées, les positions d'autres organisations et en adaptant sa démarche évaluative au contexte et aux incertitudes entourant les données, l'INESSS estime que :

SRAS-CoV-2 confirmée, patients hospitalisés en raison de la COVID-19 SANS ou **AVEC besoin d'une oxygénation à faible débit**

L'usage, dans un contexte de COVID-19, **d'**héparine de faible poids moléculaire (HFPM), ou **d'hépari**ne non fractionnée (HNF), à dose thérapeutique, en combinaison avec des standards de soins, pendant 14 jours ou jusqu'à la sortie de l'hôpital (première des deux situations à survenir), pourrait être considéré plutôt qu'une dose thromboprophylactique selon la pratique usuelle de l'établissement, chez les patients hospitalisés en raison de la COVID-19 sans oxygénothérapie ou dont l'état nécessite une oxygénation à faible débit, à moins d'une condition médicale sous-jacente accentuant les risques de saignements majeurs, d'une contre-indication ou d'une espérance de vie inférieure à 48 heures selon le jugement du clinicien, et ce en raison des avantages cliniques démontrés sur le nombre de jours en vie sans support d'organe (support respiratoire ou cardiovasculaire) (au jour 21) ainsi que de l'absence d'une augmentation statistiquement significative de la fréquence ou de la gravité des effets indésirables comparativement à la dose thromboprophylactique observée dans les études analysées dans un contexte de COVID-19.

L'usage, dans un contexte de COVID-19, de rivaroxaban PO à dose thérapeutique plutôt qu'une dose thérapeutique ou thromboprophylactique d'HFPM ou HNF selon la pratique usuelle de l'établissement, est non conseillé en dehors d'un protocole de recherche chez les patients hospitalisés en raison de la COVID-19, qui n'ont pas besoin d'un apport en oxygène ou dont l'état nécessite une oxygénation à faible débit, en raison de l'incertitude scientifique quant aux avantages potentiels et parce que d'autres options thérapeutiques pourraient être plus avantageuses.

SRAS-CoV-2 confirmée, patients hospitalisés en raison de la COVID-19 AVEC **besoin d'une oxygénation à haut débit ou d'une ventilation mécanique non** invasive ou invasive

L'usage, dans un contexte de COVID-19, **d'**HFPM ou HNF à dose thérapeutique plutôt qu'à une dose thromboprophylactique selon la pratique usuelle de l'établissement, est non conseillé en dehors d'un protocole de recherche, chez les patients hospitalisés en raison de la COVID-19, dont l'état, à l'amorce du traitement, nécessite une oxygénation à haut débit ou une ventilation mécanique non invasive ou invasive, et ce en raison de l'état actuel des connaissances.

Second asymptomatic carotid surgery trial (ACST2): a randomised comparison of carotid artery stenting versus carotid endarterectomy

Halliday A, Bulbulia R, Bonati LH et coll.

Lancet. 2021;398:1065-73.

	Allocated CAS (n=1811)	Allocated CEA (n=1814)	p value	Had CAS first	Had CEA first
Had no carotid procedure	106	78	..	..	..
Had a carotid procedure†	1705	1736	..	1653	1788
Worst procedural stroke, mRS score					
6 (fatal)	7	5	0·77	6	6
3–5 (disabling)	6	7	1·00	8	5
2	9	9	1·00	9	9
1	23	15	0·25	21	17
0	16	5	0·03	15	6
0–2 (non-disabling)	48 (2·7%)	29 (1·6%)	0·03	45 (2·7%)	32 (1·8%)
Subtotal: any stroke	61 (3·6%)	41 (2·4%)	0·06	59 (3·6%)	43 (2·4%)
MI					
Fatal	0	4	0·13	0	4
Non-fatal	5	8	0·58	4	9
Subtotal: any MI	5 (0·3%)	12 (0·7%)	0·15	4 (0·2%)	13 (0·7%)
Other death‡	2	2	1·00	3	1
Death, MI, or any stroke	67 (3·9%)	55 (3·2%)	0·26	65 (3·9%)	57 (3·2%)
Death or any stroke	63 (3·7%)	47 (2·7%)	0·12	62 (3·8%)	48 (2·7%)
Death or disabling stroke	15 (0·9%)	18 (1·0%)	0·77	17 (1·0%)	16 (0·9%)

Data are n or n (%), unless otherwise specified. CAS=carotid artery surgery. CEA=carotid endarterectomy. MI=myocardial infarction. mRS=modified Rankin Scale. *First carotid procedure undergone after randomisation. †Denominator for percentages. ‡One groin haemorrhage after CAS, one unrelated trauma death after CAS, one cervical haemorrhage after CEA, and one generalised sepsis (allocated CEA but got CAS).

Table 2*: Death, stroke, or MI within 30 days of first carotid procedure

	Allocated CAS (n=1811)	Allocated CEA (n=1814)
Procedural stroke or death	63	47
No procedural stroke or death*	1748	1767
Worst non-procedural stroke, by mRS score†		
6 (fatal)	16 (0·9%)	20 (1·1%)
3–5 (disabling)	28 (1·6%)	25 (1·4%)
2	9	5
1	23	17
0	15	12
0–2 (non-disabling)	47 (2·7%)	34 (1·9%)
Total: any non-procedural stroke	91 (5·2%)	79 (4·5%)

CAS=carotid artery surgery. CEA=carotid endarterectomy. mRS=modified Rankin Scale. *Denominator for percentages; this includes patients with no procedure. †Corresponding numbers of first non-procedural strokes (CAS *vs* CEA): 12 versus 17 fatal, 23 versus 22 disabling, 56 versus 40 non-disabling, and totals 91 versus 79; these totals include 15 strokes (seven CAS and eight CEA) with neither procedure beforehand, of which five were in the first month (ie, shortly after randomisation, while awaiting treatment) and ten were later (at mean 25 months after entry).

***Table 3*: Non-procedural strokes during follow-up**

RR 1,16
(IC 95 % 0,86-1,57)
p = 0,33

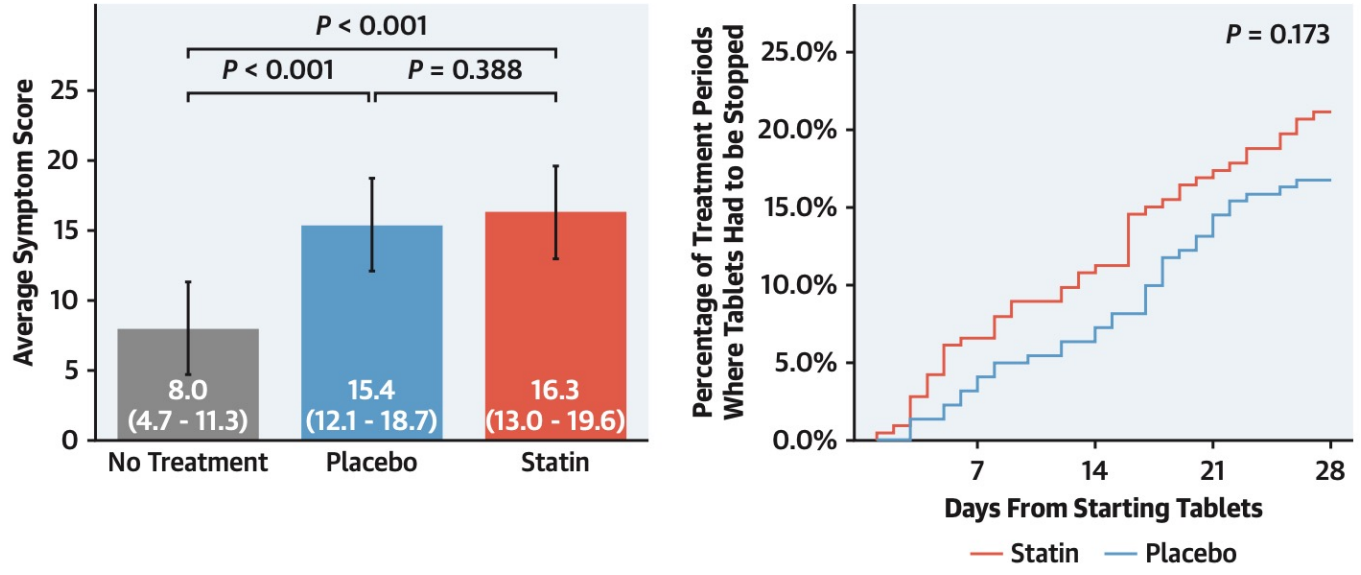
Impact clinique : les complications graves sont peu fréquentes après une EC et une endoprothèse carotidienne, et l'effet à long terme des 2 procédures est comparable.

Side Effect Patterns in a Crossover Trial of Statin, Placebo, and No Treatment

Howard JP, Wood FA, Finegold JA et coll.

J Am Coll Cardiol. 2021;78:1210-22.

CENTRAL ILLUSTRATION Symptom Scores and Cumulative Early Tablet Stopping Rates by Treatment



Howard, J.P. et al. J Am Coll Cardiol. 2021;78(12):1210-1222.

(Left) The mean symptom scores across the 3 treatment types (statin, placebo, and no treatment). **Whiskers** indicate the associated 95% CIs. **(Right)** The cumulative rate of stopping tablets for patients starting a statin **(red)** or placebo **(blue)** after a no-tablet month. *P* value derived from a mixed-effects logistic regression model.

Impact clinique : La majorité des symptômes causés par les statines sont un effet nocébo.

Trial of Intensive Blood-Pressure Control in Older Patients with Hypertension

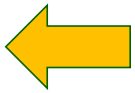
Zhang W, Zhang S, Deng Y et coll.

N Engl J Med. 2021;385:1268-79.

Table 2. Hazard Ratios for the Primary and Secondary Outcomes.*

Outcome	Intensive Treatment (N=4243)		Standard Treatment (N=4268)		Hazard Ratio (95% CI)	P Value
	no. of patients (%)	*% with event per year*	*no. of patients (%)*	*% with event per year*		
Primary outcome†	147 (3.5)	1.0	196 (4.6)	1.4	0.74 (0.60–0.92)	0.007
Secondary outcomes						
Components of primary outcome						
Stroke	48 (1.1)	0.3	71 (1.7)	0.5	0.67 (0.47–0.97)	—
Acute coronary syndrome	55 (1.3)	0.4	82 (1.9)	0.6	0.67 (0.47–0.94)	—
Acute decompensated heart failure	3 (0.1)	0.03	11 (0.3)	0.09	0.27 (0.08–0.98)	—
Coronary revascularization	22 (0.5)	0.1	32 (0.7)	0.2	0.69 (0.40–1.18)	—
Atrial fibrillation	24 (0.6)	0.2	25 (0.6)	0.2	0.96 (0.55–1.68)	—
Death from cardiovascular causes	18 (0.4)	0.1	25 (0.6)	0.2	0.72 (0.39–1.32)	—
Death from any cause	67 (1.6)	0.5	64 (1.5)	0.5	1.11 (0.78–1.56)	—
Major adverse cardiac events‡	100 (2.4)	0.7	138 (3.2)	1.0	0.72 (0.56–0.93)	—

NNT = 89
(IC 95 % 51-342)



Impact clinique : chez des sujets de 60-80 ans en Chine, un traitement anti-hypertenseur intensif réduit les événements cardiovasculaires à 3,3 ans comparativement à un traitement anti-hypertenseur standard.

SPRINT vs STEP

	SPRINT [1] (n = 9 361)	**STEP** (n = 8 511)
Patients	50 ans + avec FR CV	60-80 ans
Intervention vs contrôle	TAS < 120 vs < 140 mmHg	TAS 110-<130 vs 130-<150 mmHg
TA au suivi	TAS 120 vs 134 mmHg (à la fin)	TAS 127 vs 136 mmHg (au suivi)
Suivi	3,33 ans	3,34 ans
Critère de jugement 1e	5,6 % vs 7,6 %* **RR 0,73 (IC 95 % 0,63-0,86)**	3,5 % vs 4,6 %** **RR 0,74 (IC 95 % 0,60-0,92)**
Mortalité totale	RR 0,75 (IC 95 % 0,61-0,92)	RR 1,11 (IC 95 % 0,78-1,56)

* first occurrence of myocardial infarction, acute coronary syndrome not resulting in infarction, stroke, acute decompensated heart failure, or death from cardiovascular causes.
** composite of stroke, acute coronary syndrome (acute myocardial infarction and hospitalization for unstable angina), acute decompensated heart failure, coronary revascularization, atrial fibrillation, or death from cardiovascular causes.

N.B. : SPRINT et STEP : arrêt prématuré des études.

[1] N Engl J Med. 2021;384:1921-30.

Long-Term Risk for Major Bleeding During Extended Oral Anticoagulant Therapy for First Unprovoked Venous Thromboembolism : A Systematic Review and Meta-analysis

Khan F, Tritschler T, Kimpton M et coll.

Ann Intern Med. 2021;174:1420-29.

Table 1. Incidence of Major Bleeding*

Interval of Follow-up During Extended Anticoagulation	Study Cohorts, *n*	Events, *n*			Person-Years, *n*	Incidence Rate per 100 Person-Years (95% CI)		
		Major Bleeding	Intracranial Bleeding	Fatal Bleeding		Major Bleeding	Intracranial Bleeding	Fatal Bleeding
Overall								
VKA	24	207	37	15	12 251	1.74 (1.34–2.20)	0.39 (0.25–0.57)	0.16 (0.10–0.24)
DOAC	11	40	9	2	3934	1.12 (0.72–1.62)	0.29 (0.14–0.50)	0.10 (0.03–0.23)
Year 1								
VKA	24	128	26	9	6989	2.00 (1.56–2.50)	0.53 (0.35–0.74)	0.18 (0.10–0.30)
DOAC	11	40	9	2	3768	1.20 (0.74–1.77)	0.31 (0.15–0.53)	0.11 (0.03–0.24)
Year 2†								
VKA	18	48	7	2	2707	1.65 (0.99–2.48)	0.42 (0.20–0.72)	0.21 (0.07–0.41)
Years 3–5†								
VKA	5	31	4	4	2555	0.95 (0.35–1.83)	0.22 (0.08–0.44)	0.20 (0.07–0.42)

	Cumulative Incidence (95% CI), %		
	Major Bleeding	Intracranial Bleeding	Fatal Bleeding
After 2 y†			
VKA	3.6 (2.5–4.9)	0.9 (0.5–1.5)	0.4 (0.2–0.7)
After 5 y†			
VKA	6.3 (3.6–10.0)	1.6 (0.8–2.7)	1.0 (0.4–1.9)

DOAC = direct oral anticoagulant; VKA = vitamin K antagonist.
* I^2 range, 31%–54% for major bleeding and 0%–1% for intracranial and fatal bleeding.
† For DOACs in these follow-up intervals, data were insufficient to estimate incidence.

Table 2. Case-Fatality Rate of Major Bleeding*

Type of Anticoagulant	Study Cohorts, *n*	Fatal Bleeding Events, *n*	Major Bleeding Events, *n*	Case-Fatality Rate (95% CI), %
Any	33	17	247	8.4 (5.4–12.1)
Vitamin K antagonists	22	15	207	8.3 (5.1–12.2)
Direct oral anticoagulants	11	2	40	9.7 (3.2–19.2)

* I^2 = 0% for all case-fatality rates.

Impact clinique : chez les pts avec 1^{e} MTE non provoquée anticoagulés de façon prolongée, le risque de saignement majeur à long terme et ses conséquences sont significatives.

Autres études d'impact – Facteurs de risque (1/14)

Rosenson RS, Burgess LJ, Ebenbichler CF, et al. Evinacumab in Patients with Refractory Hypercholesterolemia. N Engl J Med. 2020;383(24):2307-19.

Nicholls SJ, Lincoff AM, Garcia M, et al. Effect of High-Dose Omega-3 Fatty Acids vs Corn Oil on Major Adverse Cardiovascular Events in Patients at High Cardiovascular Risk: The STRENGTH Randomized Clinical Trial. JAMA. 2020;324(22):2268-80.

Wilding JPH, Batterham RL, Calanna S, et al; STEP 1 Study Group. Once-Weekly Semaglutide in Adults with Overweight or Obesity. N Engl J Med. 2021;384(11):989-1002.

Autres études d'impact – Facteurs de risque (2/14)

Hess CN, Cannon CP, Beckman JA, et al. Effectiveness of Blood Lipid Management in Patients With Peripheral Artery Disease. J Am Coll Cardiol. 2021;77(24):3016-3027.

Rosenstock J, Wysham C, Frías JP, et al. Efficacy and safety of a novel dual GIP and GLP-1 receptor agonist tirzepatide in patients with type 2 diabetes (SURPASS-1): a double-blind, randomised, phase 3 trial. Lancet. 2021;398(10295):143-55.

Herrett E, Williamson E, Brack K, et al; StatinWISE Trial Group. Statin treatment and muscle symptoms: series of randomised, placebo controlled n-of-1 trials. BMJ. 2021;372:n135.

Autres études d'impact – Facteurs de risque (3/14)

Søgaard M, Nielsen PB, Skjøth F, Eldrup N, Larsen TB. Temporal Changes in Secondary Prevention and Cardiovascular Outcomes After Revascularization for Peripheral Arterial Disease in Denmark: A Nationwide Cohort Study. Circulation. 2021;143(9):907-920.

Baker TB, Piper ME, Smith SS, et al. Effects of Combined Varenicline With Nicotine Patch and of Extended Treatment Duration on Smoking Cessation: A Randomized Clinical Trial. JAMA. 2021;326(15):1485-1493.

Autres études d'impact – Maladie artérielle (4/14)

Hiatt WR, Bonaca MP, Patel MR, et al. Rivaroxaban and Aspirin in Peripheral Artery Disease Lower Extremity Revascularization: Impact of Concomitant Clopidogrel on Efficacy and Safety. Circulation. 2020;142(23):2219-30.

Paul SK, Bhatt DL, Montvida O. The association of amputations and peripheral artery disease in patients with type 2 diabetes mellitus receiving sodium-glucose cotransporter type-2 inhibitors: real-world study. Eur Heart J. 2021;42(18):1728-38.

Huang CY, Lee JK. Sodium-glucose co-transporter-2 inhibitors and major adverse limb events: A trial-level meta-analysis including 51 713 individuals. Diabetes Obes Metab. 2020;22(12):2348-55.

Autres études d'impact – Maladie artérielle (5/14)

Sofat S, Chen X, Chowdhury MM, et al. Effects of Statin Therapy and Dose on Cardiovascular and Limb Outcomes in Peripheral Arterial Disease: A Systematic Review and Meta-analysis. Eur J Vasc Endovasc Surg. 2021;62(3):450-461.

Jones WS, Mulder H, Wruck LM, et al; ADAPTABLE Team. Comparative Effectiveness of Aspirin Dosing in Cardiovascular Disease. N Engl J Med. 2021;384(21):1981-1990.

Golledge J, Singh TP. Effect of blood pressure lowering drugs and antibiotics on abdominal aortic aneurysm growth: a systematic review and meta-analysis. Heart. 2021;107(18):1465-1471.

Autres études d'impact – Maladie artérielle (6/14)

Debus ES, Nehler MR, Govsyeyev N, et al. Effect of Rivaroxaban and Aspirin in Patients With Peripheral Artery Disease Undergoing Surgical Revascularization: Insights From the VOYAGER PAD Trial. Circulation. 2021;144(14):1104-1116.

Krantz MJ, Debus SE, Hsia J, et al. Low-dose rivaroxaban plus aspirin in older patients with peripheral artery disease undergoing acute limb revascularization: insights from the VOYAGER PAD trial. Eur Heart J. 2021;42(39):4040-4048.

Hess CN, Patel MR, Bauersachs RM, et al. Safety and Effectiveness of Paclitaxel Drug-Coated Devices in Peripheral Artery Revascularization: Insights From VOYAGER PAD. J Am Coll Cardiol. 2021;78(18):1768-1778.

Autres études d'impact – Maladie artérielle (7/14)

Madabhushi V, Davenport D, Jones S, et al. Revascularization of intermittent claudicants leads to more chronic limb-threatening ischemia and higher amputation rates. J Vasc Surg. 2021;74(3):771-9.

Eikelboom JW, Bhatt DL, Fox KAA, et al. Mortality Benefit of Rivaroxaban Plus Aspirin in Patients With Chronic Coronary or Peripheral Artery Disease. J Am Coll Cardiol. 2021;78(1):14-23.

Paul SK, Bhatt DL, Montvida O. The association of amputations and peripheral artery disease in patients with type 2 diabetes mellitus receiving sodium-glucose cotransporter type-2 inhibitors: real-world study. Eur Heart J. 2021 May 7;42(18):1728-1738.

Autres études d'impact – Maladie veineuse (8/14)

Lobastov K, Sautina E, Alencheva E, et al. Intermittent Pneumatic Compression in Addition to Standard Prophylaxis of Postoperative Venous Thromboembolism in Extremely High-risk Patients (IPC SUPER): A Randomized Controlled Trial. Ann Surg. 2021;274(1):63-9.

Roy PM, Penaloza A, Hugli O, et al. Triaging acute pulmonary embolism for home treatment by Hestia or simplified PESI criteria: the HOME-PE randomized trial. Eur Heart J. 2021;42(33):3146-3157.

Xu K, de Wit K, Geersing GJ, et al. A simplified decision rule to rule out deep vein thrombosis using clinical assessment and D-dimer. J Thromb Haemost. 2021;19(7):1752-1758.

Autres études d'impact – Maladie veineuse (9/14)

Kuczmik W, Wysokinski WE, Macedo T, et al. Calf Vein Thrombosis Outcomes Comparing Anticoagulation and Serial Ultrasound Imaging Management Strategies. Mayo Clin Proc. 2021;96(5):1184-1192.

Pasha AK, McBane RD, Chaudhary R, et al. Timing of venous thromboembolism diagnosis in hospitalized and non-hospitalized patients with COVID-19. Thromb Res. 2021;207:150-157.

Ingason AB, Hreinsson JP, Agustsson AS, et al. Rivaroxaban Is Associated With Higher Rates of Gastrointestinal Bleeding Than Other Direct Oral Anticoagulants : A Nationwide Propensity Score-Weighted Study. Ann Intern Med. 2021;174(11):1493-1502.

Autres études d'impact – Neurologie (10/14)

Hutchinson PJ, Edlmann E, Bulters D, et al. Trial of Dexamethasone for Chronic Subdural Hematoma. N Engl J Med. 2020;383(27):2616-27.

Langezaal LCM, van der Hoeven E, Mont'Alverne FJA, et al. Endovascular Therapy for Stroke Due to Basilar-Artery Occlusion. N Engl J Med. 2021;384(20):1910-20.

Tuna MA, Rothwell PM. Diagnosis of non-consensus transient ischaemic attacks with focal, negative, and non-progressive symptoms: population-based validation by investigation and prognosis. Lancet. 2021;397(10277):902-12.

Perry JJ, Sivilotti MLA, Emond M, et al. Prospective validation of Canadian TIA Score and comparison with ABCD2 and ABCD2i for subsequent stroke risk after transient ischaemic attack: multicentre prospective cohort study. BMJ. 2021;372:n49.

Autres études d'impact – Neurologie (11/14)

Lioutas VA, Ivan CS, Himali JJ, et al. Incidence of Transient Ischemic Attack and Association With Long-term Risk of Stroke. JAMA. 2021;325(4):373-81.

Zi W, Qiu Z, Li F, et al. Effect of Endovascular Treatment Alone vs Intravenous Alteplase Plus Endovascular Treatment on Functional Independence in Patients With Acute Ischemic Stroke: The DEVT Randomized Clinical Trial. JAMA. 2021;325(3):234-44.

Suzuki K, Matsumaru Y, Takeuchi M, et al. Effect of Mechanical Thrombectomy Without vs With Intravenous Thrombolysis on Functional Outcome Among Patients With Acute Ischemic Stroke: The SKIP Randomized Clinical Trial. JAMA. 2021;325(3):244-53.

Autres études d'impact – Neurologie (12/14)

Bernstein RA, Kamel H, Granger CB, et al. Effect of Long-term Continuous Cardiac Monitoring vs Usual Care on Detection of Atrial Fibrillation in Patients With Stroke Attributed to Large- or Small-Vessel Disease: The STROKE-AF Randomized Clinical Trial. JAMA. 2021;325(21):2169-77.

Buck BH, Hill MD, Quinn FR, et al. Effect of Implantable vs Prolonged External Electrocardiographic Monitoring on Atrial Fibrillation Detection in Patients With Ischemic Stroke: The PER DIEM Randomized Clinical Trial. JAMA. 2021;325(21):2160-8.

Grotta JC, Yamal JM, Parker SA, et al. Prospective, Multicenter, Controlled Trial of Mobile Stroke Units. N Engl J Med. 2021;385(11):971-81.

Autres études d'impact – Neurologie (13/14)

Engelter ST, Traenka C, Gensicke H, et al. Aspirin versus anticoagulation in cervical artery dissection (TREAT-CAD): an open-label, randomised, non-inferiority trial. Lancet Neurology. 2021;20(5):341-50.

Lapergue B, Blanc R, Costalat V, et al. Effect of Thrombectomy With Combined Contact Aspiration and Stent Retriever vs Stent Retriever Alone on Revascularization in Patients With Acute Ischemic Stroke and Large Vessel Occlusion: The ASTER2 Randomized Clinical Trial. JAMA. 2021;326(12):1158-69.

LeCouffe NE, Kappelhof M, Treurniet KM, et al. A randomized trial of intravenous alteplase before endovascular treatment for stroke. N Engl J Med 2021;385(20):1833-1844.

Autres études d'impact – Neurologie (14/14)

Krawisz AK, Rosenfield K, White CJ, et al. Clinical Impact of Contralateral Carotid Occlusion in Patients Undergoing Carotid Artery Revascularization. J Am Coll Cardiol. 2021;77(7):835-844.

Grewal K, Atzema CL, Austin PC, et al. Intracranial hemorrhage after head injury among older patients on anticoagulation seen in the emergency department: a population-based cohort study. CMAJ 2021;193(40):E1561-67.

Al-Shahi Salman R, Dennis MS, Sandercock PAG, et al. Effects of Antiplatelet Therapy After Stroke Caused by Intracerebral Hemorrhage: Extended Follow-up of the RESTART Randomized Clinical Trial. JAMA Neurol. 2021;78(10):1179–86.

Messages clés

- Encore une année marquée par la COVID-19 …
- Avec plusieurs essais cliniques intéressants en vasculaire : PEP, LITE, SAMSON, STEP, etc.
- Reste à savoir comment seront appliqués ces résultats en pratique.

Merci !

Questions ?

Centre intégré
universitaire de santé
et de services sociaux
de l'Estrie – Centre
hospitalier universitaire
de Sherbrooke

Québec

UdS Université de Sherbrooke

Faculté de médecine
et des sciences de la santé