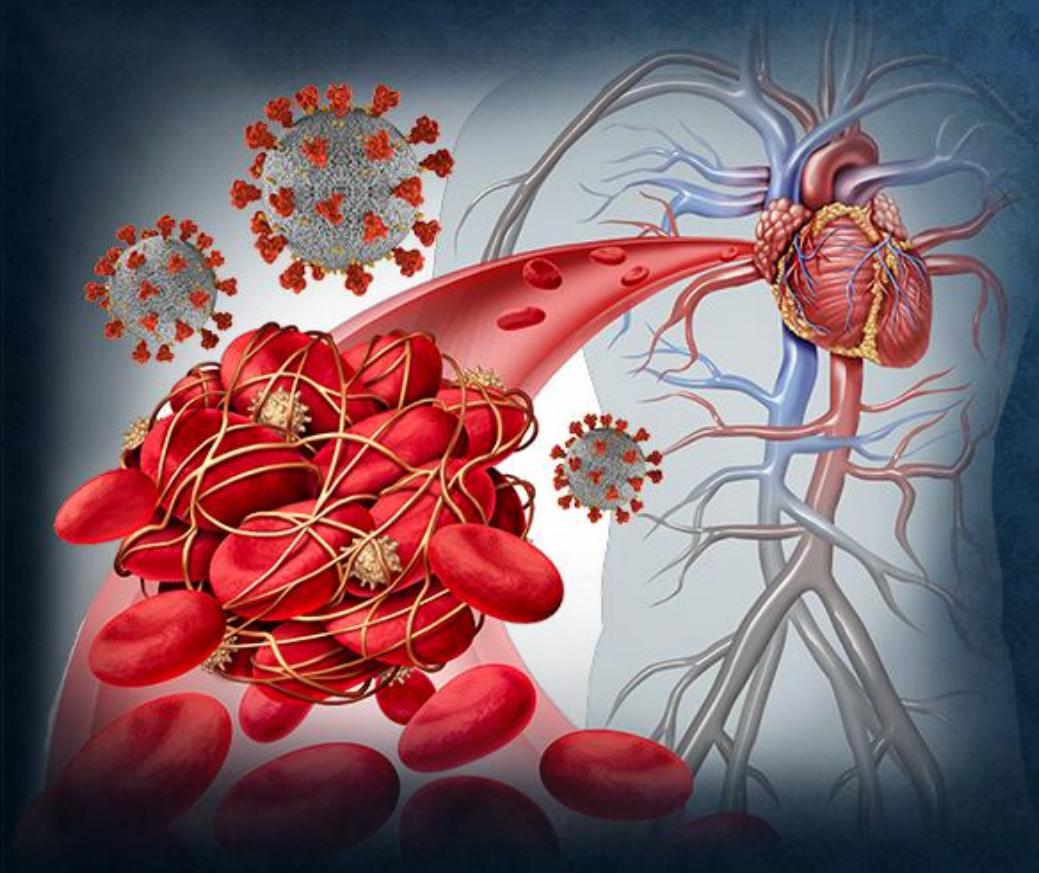


BOALA TROMBOEMBOLICA IN COVID-19



Alexandru Andritoiu

Sp. Clinic de Urgenta Militar

Centrul de Medicina vasculara

,,Regina Maria”

CRAIOVA

INFECTIA SARS-COV 2

DOAR O INFECTIE VIRALA SI ATAT?

- Marea provocare medicala, politica si organizationala a sec XXI
- Europa, continentul American, regiunea Asia-Pacific
- Impact minim pe continetul African (??)
- Evolutia in valuri succesive-tulpini-mutatii, etc...
- Nu a semanat un „val” cu celalalt
- Vaccinurile au creat mai multe „probleme”, decat au oferit „solutii”,
- Tensiuni sociale-criza economica-drepturi si libertati constitutionale restranse la limita

MARILE PROVOCARI MEDICALE...

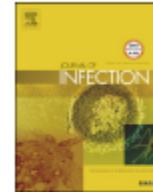
- Necunoasterea mecanismelor patogenice ale Covid-19
- Lipsa unui protocol coerent, simplu, aplicabil in toate institutiile medicale
(lipsa unui tratament specific)
- Proasta coordonare a activitatilor DSP in teritoriu cu factorii de decizie politico-administrativi
- Numarul insuficient de paturi ATI si lipsa de personal
- Lipsa unei strategii la nivel national...
- Politizarea excesiva a pandemiei...

TULBURARILE DE COAGULARE IN COVID-19

- probabil cea mai mare enigma, dar si provocare medicala
- Risc de sangerare
- Risc de tromboza
- Tromboza acuta (frecventa mare! Cat de mare?)
 - arteriala: risc de amputatie, Stroke, IMA
 - venoasa: cerebrală, membre, TEPA, teritoriul splahnic

CINE E DE VINA?

- Tulp. de coagulare
- Furtuna de cytokine (factori protrombotici/CID)
- Afектare endotelială difuză (endotelita?)

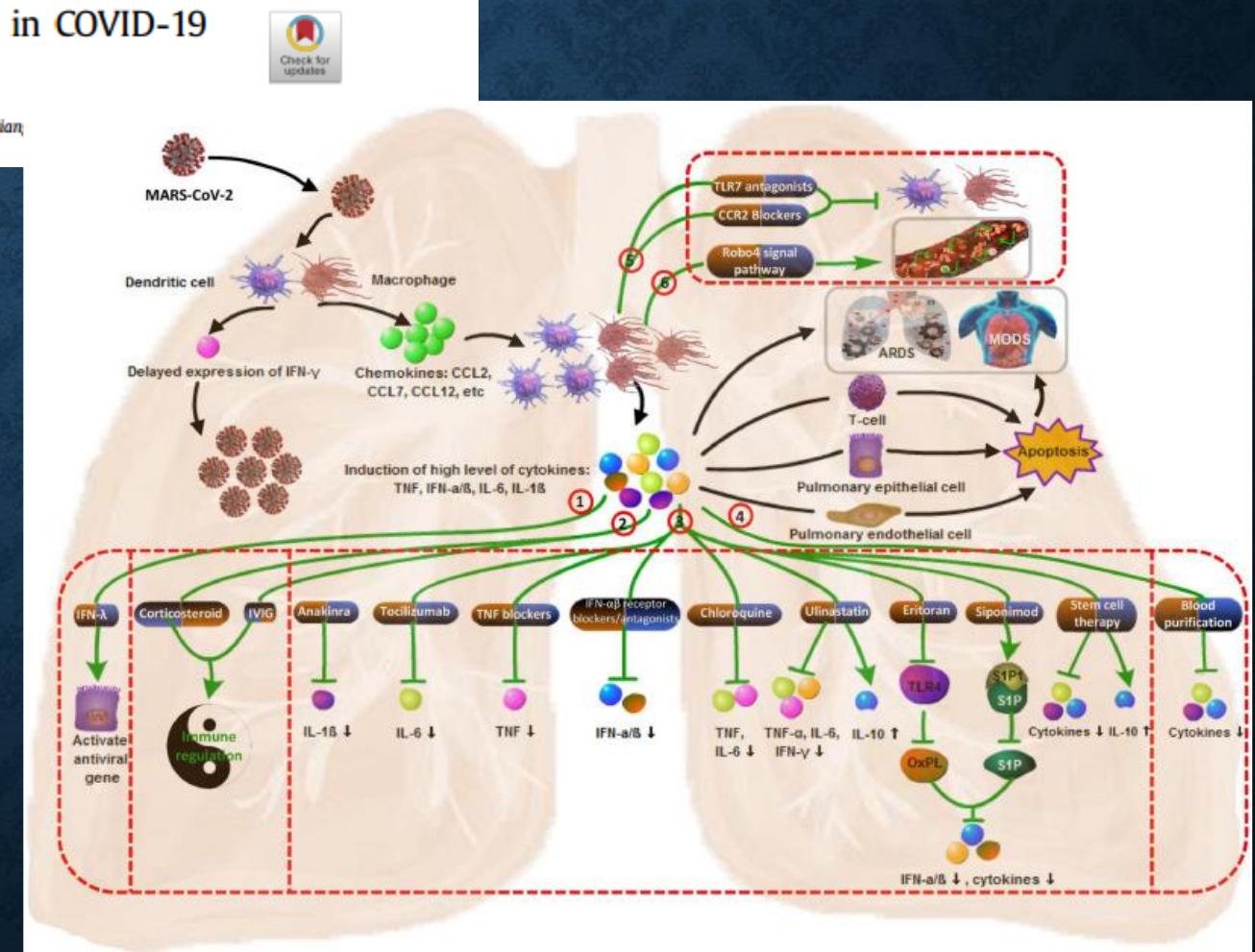
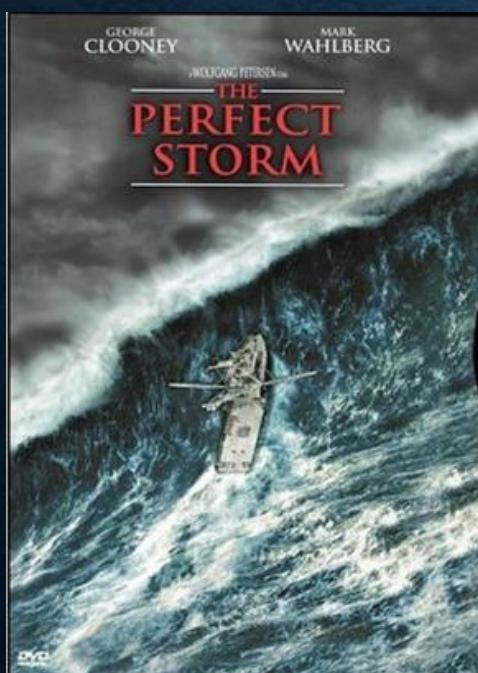


Review

The pathogenesis and treatment of the 'Cytokine Storm' in COVID-19

Qing Ye, Bili Wang, Jianhua Mao*

National Clinical Research Center for Child Health, National Children's Regional Medical Center, the Children's Hospital, Zhejiang Medicine, No 3333, Binsheng Road, Hangzhou 310052, China



3 DOAMNE SI TOTI 3

- Tromboza venoasa in infectia acuta SARS Cov 2
- Tromboza venoasa in Long-Covid
- Tromboza venoasa legata de vaccinurile anti- Covid

1. TROMBOZA VENOASA IN COVID

- FRECVENTA!

MAI FRECVENTA DECAT IN CANCER?

- profunda-TEPA
- superficiala
- mixta

Forma particulara:

- tromboza pe cateter/tromboza m. super (CPAP)

Research Paper

Thromboembolism risk of COVID-19 is high and associated with a higher risk of mortality: A systematic review and meta-analysis

Mahmoud B. Malas^{1,*}, Isaac N. Naazie¹, Nadin Elsayed, Asma Mathlouthi, Rebecca Marmor, Bryan Clary

Department of Surgery, Un

Venous thromboembolism in patients with COVID-19: Systematic review and meta-analysis

Angelo Porfidia^{a,1}, Emanuele Valeriani^{b,c,1,*}, Roberto Pola^a, Ettore Porreca^b, Anne W.S. Rutjes^d, Marcello Di Nisio^e

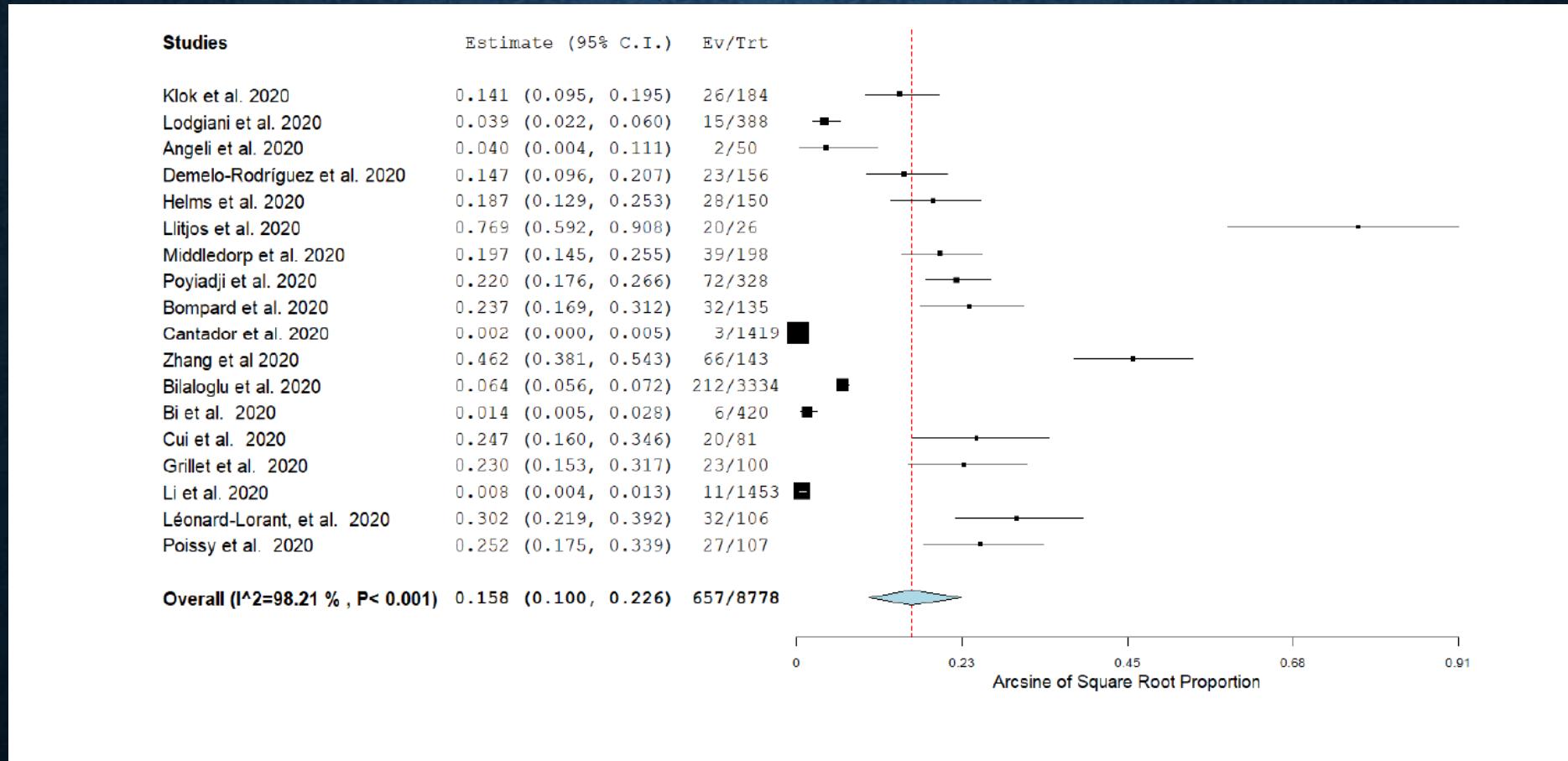
Original Paper

High Prevalence of Deep Venous Thrombosis in Non-Severe COVID-19 Patients Hospitalized for a Neurovascular Disease

Olivier Rouyer^{a-c} Irène Nora Pierre-Paul^a Amadou Talibe Balde^a
Damaris Jupiter^a Daniela Bindila^a Bernard Geny^{b, c} Valérie Wolff^{a, c}

^aStroke Unit, Strasbourg University Hospital, Strasbourg, France; ^bDepartment of Physiology and Functional Explorations, Strasbourg University Hospital, Strasbourg, France;
^cEA 3072, Federation of Translational Medicine of Strasbourg, University of Strasbourg, Strasbourg, France

INCIDENTAL TEP IN COVID-19



A meta-analysis to estimate the incidence of thromboembolism in hospitalized COVID-19 patients
AIMS Medical Science, 7(4): 301–310.

Conclusion: Pulmonary embolism (PE) and deep vein thrombosis (DVT) occurred in 16.5% and 14.8% of patients with coronavirus disease 2019 (COVID-19), respectively, and more than half of patients with PE lacked DVT.

SEARCH • EVIDENCE-BASED PRACTICE

Radiology

Pulmonary Embolism and Deep Vein Thrombosis in COVID-19: A Systematic Review and Meta-Analysis

YoungJoo Sub, MD, PhD • Hyunsook Hong, PhD • Mickaël Ohana, MD, PhD • Florian Bompard, MD •

TV SI FORMA CLINICA DE COVID

- 1. TVP/EPA mai frecvent in formele critice (ATI)
- 2. Au fost raportate cazuri si in formele moderate
- 3. Observatii personale:
 - descoperirea inf. SARS Cov 2 pornind de la dg. de tromboza venoasa
 - IN SPATELE UNEI TVP sau TVP+TVS : PNEUMONIE COVID?!

2. TVP SI LONG-COVID

- Ce este Long Covid-ul?
- Care este mecanismul sau pathogenic?
- Ipoteza:

Exista vrea legatura cu persistenta unor microtromboze?

- Exista risc de TEPA in Long-Covid? Categoric, DAAAAAA!
- Pacientii cu Long Covid au teste de coagulare modificate

Conclusions: Clotting pathologies in both acute COVID-19 infection and in Long COVID/PASC might benefit from following a regime of continued anticoagulation therapy to support the fibrinolytic system function.

Keywords: COVID-19, Long COVID/PASC, Fibrin(ogen), Microclots, Proteomics, Antiplasmin, Serum Amyloid A

Pretorius et al. *Cardiovasc Diabetol* (2021) 20:172
<https://doi.org/10.1186/s12933-021-01359-7>

Cardiovascular Diabetology

ORIGINAL INVESTIGATION

Open Access



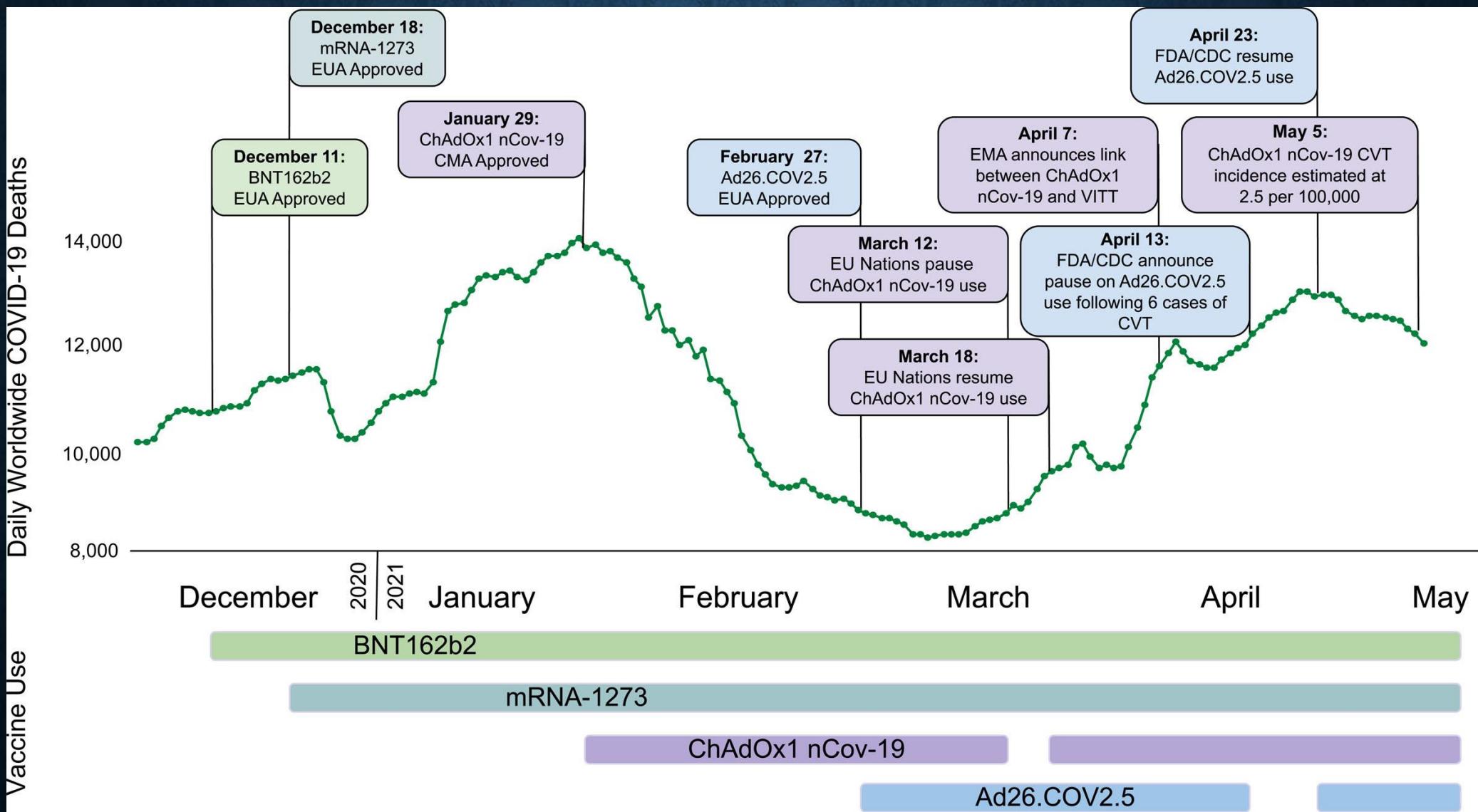
Persistent clotting protein pathology in Long COVID/Post-Acute Sequelae of COVID-19 (PASC) is accompanied by increased levels of antiplasmin

Etheresia Pretorius^{1*} Mare Vlok², Chantelle Venter¹, Johannes A. Bezuidenhout¹, Gert Jacobus Laubscher³, Janami Steenkamp^{1,4} and Douglas B. Kell^{1,5,6*}

3. TVP SI VACCINURILE

- Există o relație cauza - efect sau este doar marea hazardului?
- Există vreo relație între TVP și vaccinurile cu vector adenovirus?
- Dar vaccinurile pe baza de ARN mesager?
- Este justificată recomandarea CDC de a se folosi vaccinul Pfizer și nu J&J sau Astra Zeneca la anumite persoane cu risc de tromboza?
- Cazuri de TVP paradoxala au fost descrise/publicate la toate vaccinurile folosite în preventia infectiei SARS Cov 2!

ISTORICUL VACCINURILOR IN COVID-19



CE ESTE TTS?

National Center for Immunization & Respiratory Diseases

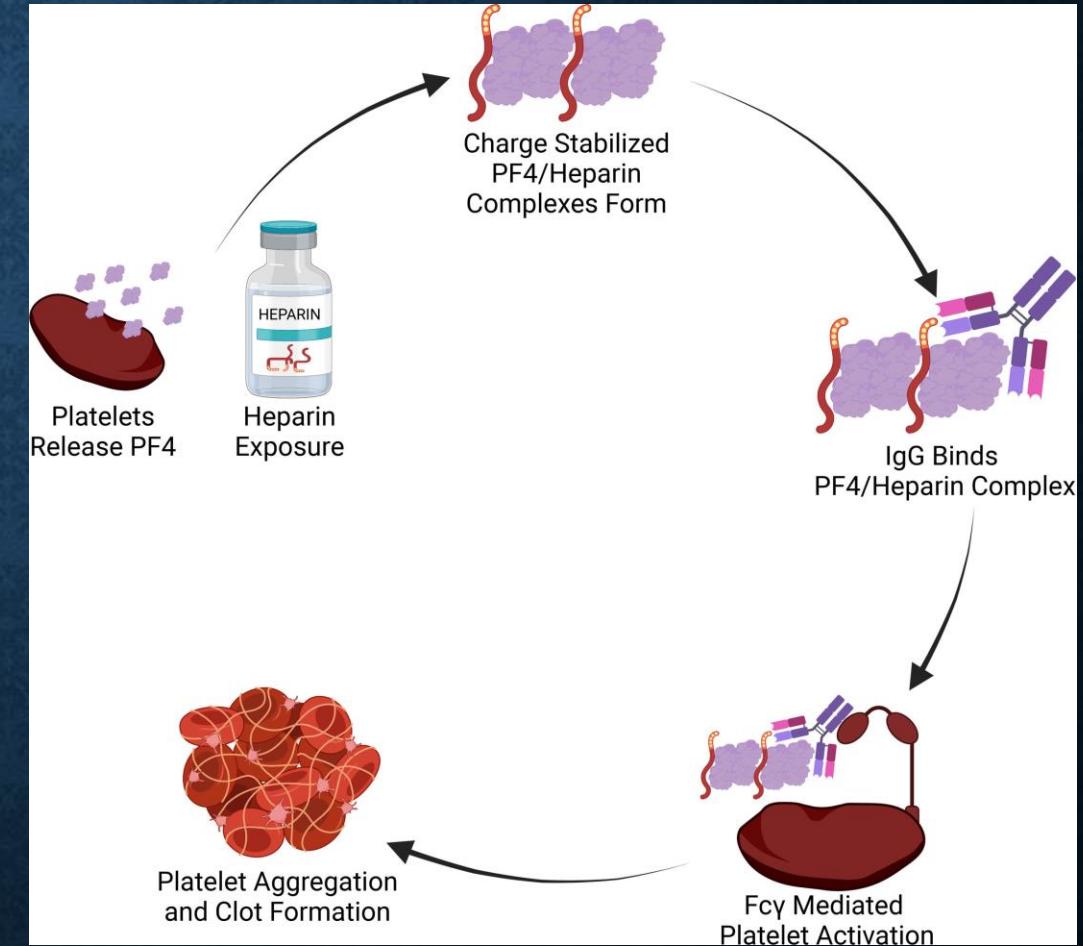
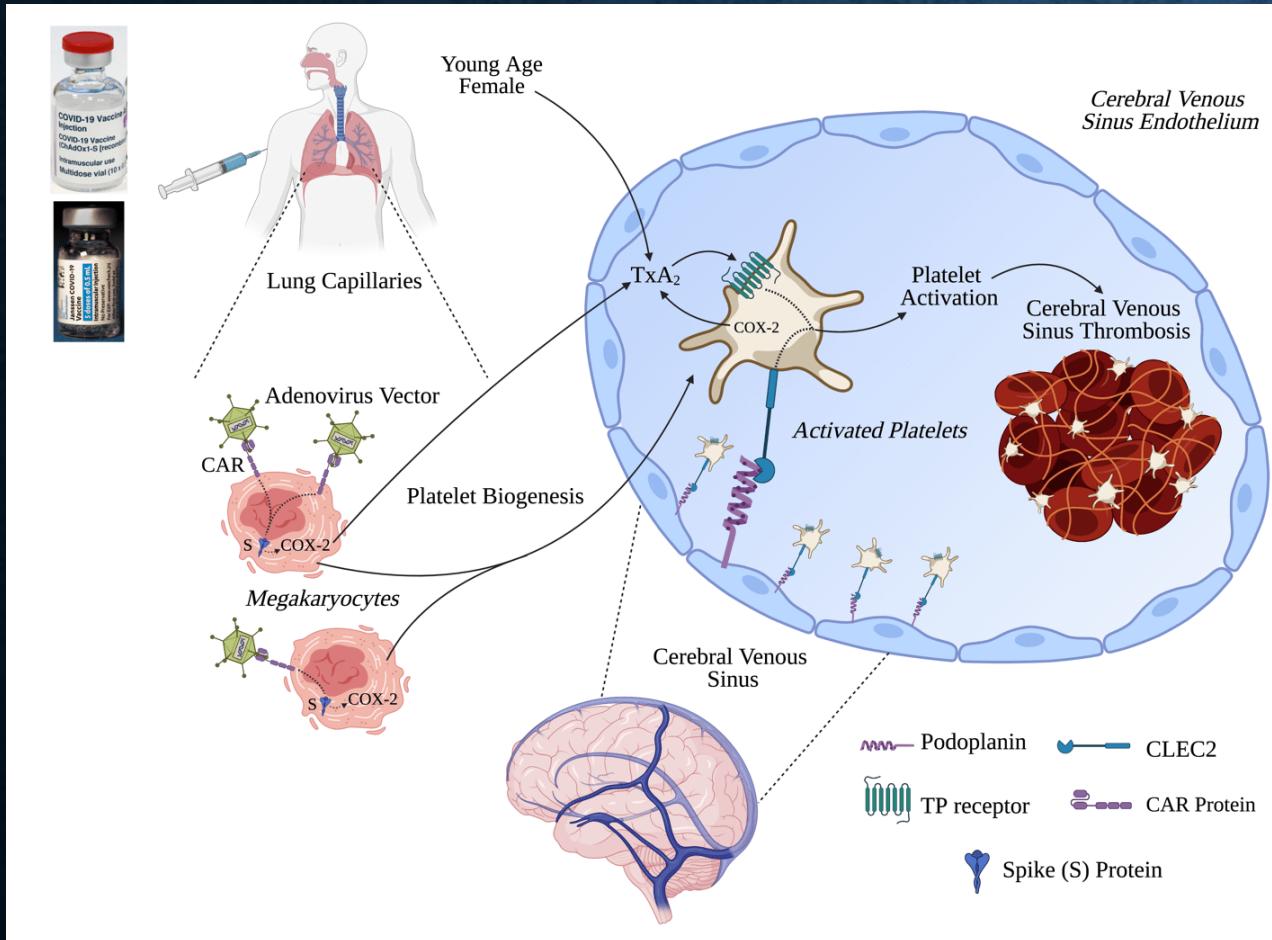


Update: Thrombosis with thrombocytopenia syndrome (TTS) following COVID-19 vaccination

Advisory Committee on Immunization Practices (ACIP)
May 12, 2021

Tromboza venoasa asociata cu trombocitopenie

MECANISM PATOGENIC-IMUNOLOGIC!



DE CE DOAR ASTRA-ZENECA?



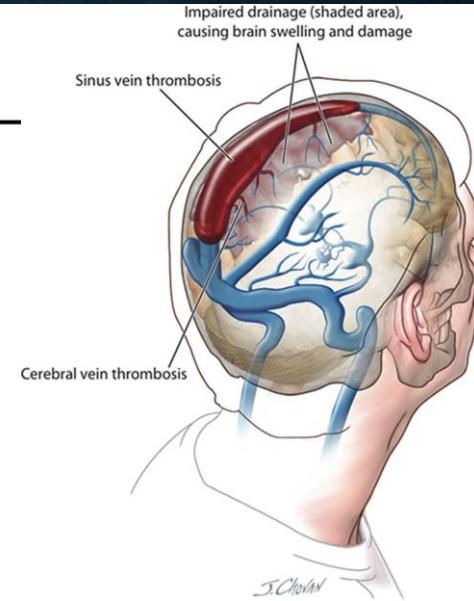
Cerebral venous sinus thrombosis after mRNA-based COVID-19 vaccination

Yohsuke Yagi¹ · Yutaro Asami¹ · Mitsuki Kyoya¹ · Takanori Yokota¹ 

Received: 23 September 2021 / Accepted: 28 October 2021

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McKeigue et al. BMC Infectious Diseases (2021) 21:1275
<https://doi.org/10.1186/s12879-021-06960-5>



BMC Infectious Diseases

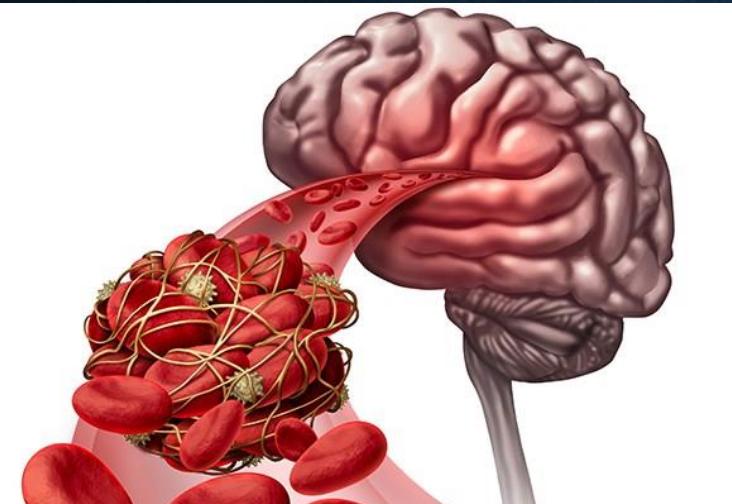
RESEARCH ARTICLE

Open Access



Association of cerebral venous thrombosis with recent COVID-19 vaccination: case-crossover study using ascertainment through neuroimaging in Scotland

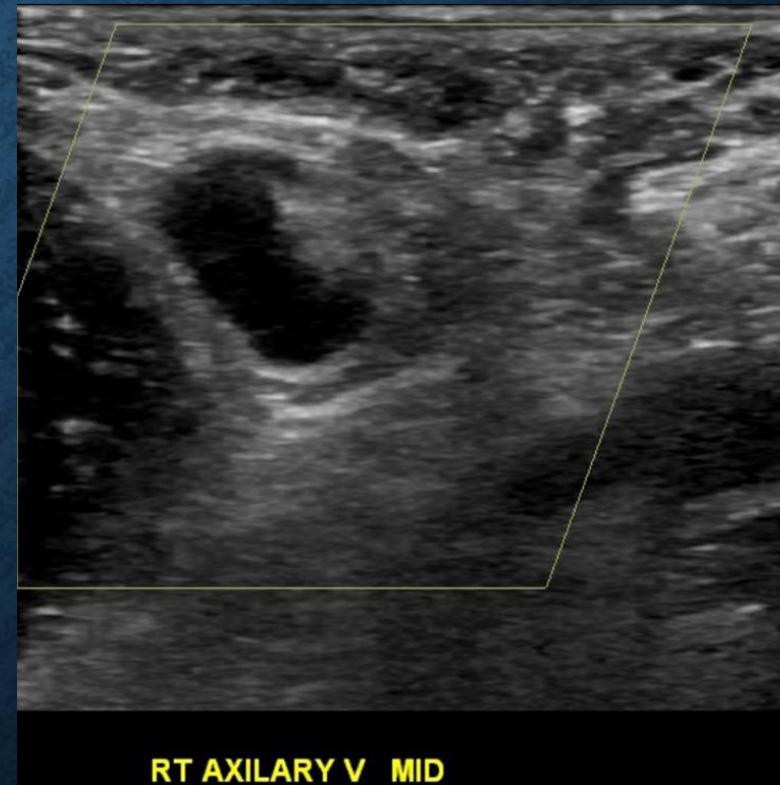
Paul M. McKeigue^{1,2}, Raj Burgul⁴, Jen Bishop², Chris Robertson^{2,5}, Jim McMenamin², Maureen O'Leary², David A. McAllister^{2,3} and Helen M. Colhoun^{2,6*} 



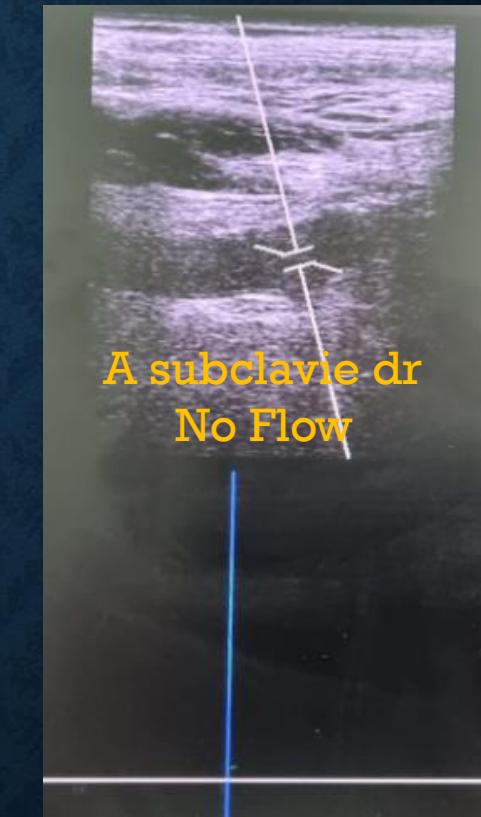
a causal association between CVT and the AstraZeneca vaccine

An unusual presentation of acute deep vein thrombosis after the Moderna COVID-19 vaccine—a case report

Chandur Bhan^{1,2}, Nimarta Bheesham^{1,2}, Fnu Shakuntulla³, Monica Sharma^{2,4}, Chenyu Sun^{1,2,^}, Mitchell Weinstein^{2,4}



OCLUZIE TROMBOTICA A SUBCLAVIE DR DOZA A 2-A VACCIN PFIZER



Risk of thrombocytopenia and thromboembolism after covid-19 vaccination and SARS-CoV-2 positive testing: self-controlled case series study

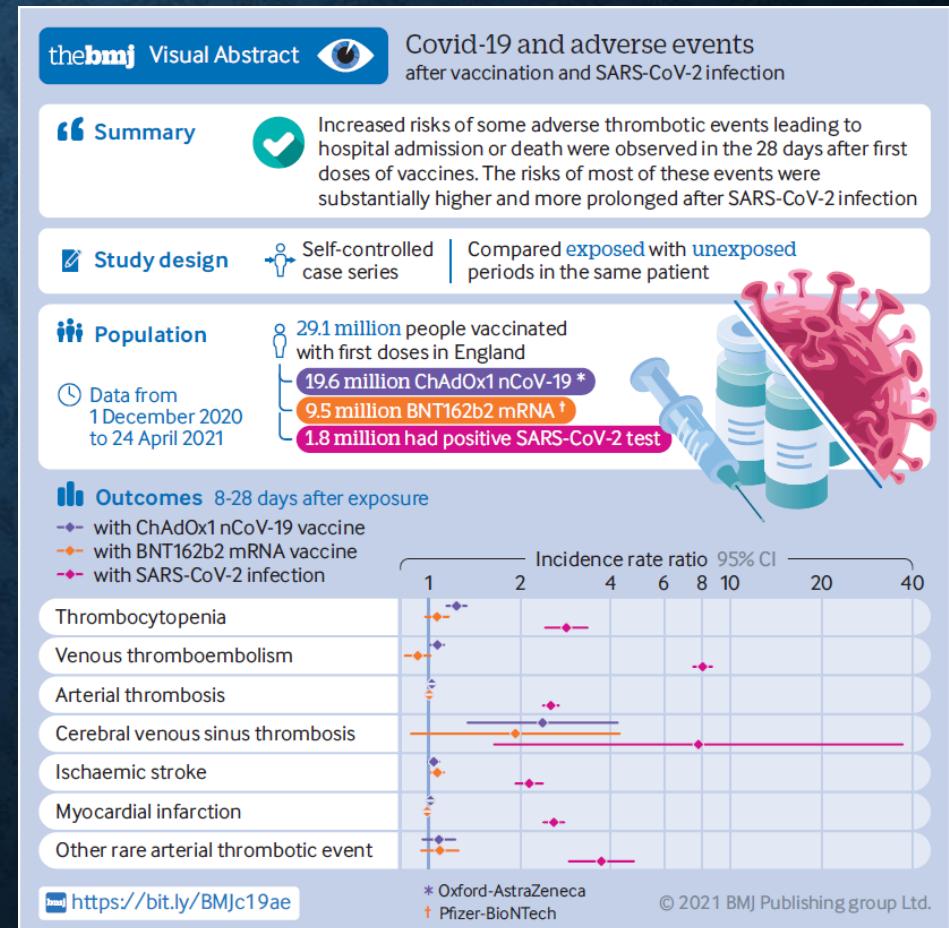
Julia Hippisley-Cox,¹ Martina Patone,¹ Xue W Mei,¹ Defne Saatci,¹ Sharon Dixon,¹

WHAT THIS STUDY ADDS

Increased risk of thrombocytopenia, venous thromboembolism, and other rare arterial thrombotic events were found after a first dose of the ChAdOx1 nCoV-19 vaccine and of arterial thromboembolism and ischaemic stroke after a first dose of the BNT162b2 (Pfizer-BioNTech) vaccine.

Increased risk of cerebral venous sinus thrombosis was found after a first dose of both vaccines—a week later with BNT162b2 than with ChAdOx1 nCoV-19

The risks of these outcomes after vaccination were much lower than those associated with SARS-CoV-2 infection in the same population



COVID-19 Vaccine-Associated Cerebral Venous Thrombosis in Germany

Jörg B. Schulz, MD ,^{1,2} Peter Berlit, MD,³ Hans-Christoph Diener, MD,⁴ Christian Gerloff, MD,^{3,5} Andreas Greinacher, MD,⁶ Christine Klein, MD ,^{3,7} Gabor C. Petzold, MD,^{8,9} Marco Piccininni, MSc,^{10,11} Sven Poli, MD ,¹² Rainer Röhrlig, MD,¹³ Helmuth Steinmetz, MD,¹⁴ Thomas Thiele, MD,⁶ and

Risk of thrombocytopenia and thromboembolism after covid-19 vaccination and SARS-CoV-2 positive testing: self-controlled case series study

Julia Hippisley-Cox,¹ Martina Patone,¹ Xue W Mei,¹ Defne Saatci,¹ Sharon Dixon,¹ Kamlesh Khunti,² Francesco Zaccardi,² Peter Watkinson,^{3,5} Manu Shankar-Hari,⁴ James Doidge,^{5,6} David A Harrison,^{5,6} Simon J Griffin,^{7,8} Aziz Sheikh,⁹ Carol A C Coupland^{1,10}

Deep vein thrombosis more than two weeks after vaccination against COVID-19

SHORT CASE REPORT

Risk of venous thrombotic events and thrombocytopenia in sequential time periods after ChAdOx1 and BNT162b2 COVID-19 vaccines: A national cohort study in England

Nick J Andrews,^a Julia Stowe,^{a,*} Mary EB Ramsay,^a and Elizabeth Miller,^{a,b}

^aImmunisation and Countermeasures Division, UK Health Security Agency, 61 Colindale Avenue London NW9 5EQ, UK

^bDepartment of Infectious Disease Epidemiology, Faculty of Epidemiology & Population Health, London School of Hygiene & Tropical Medicine, Keppel St, London WC1E 7HT, UK

O, CE VESTE MINUNATA!

Special Reports > Exclusives

Does Omicron Pose as Much of a Blood Clot Threat?

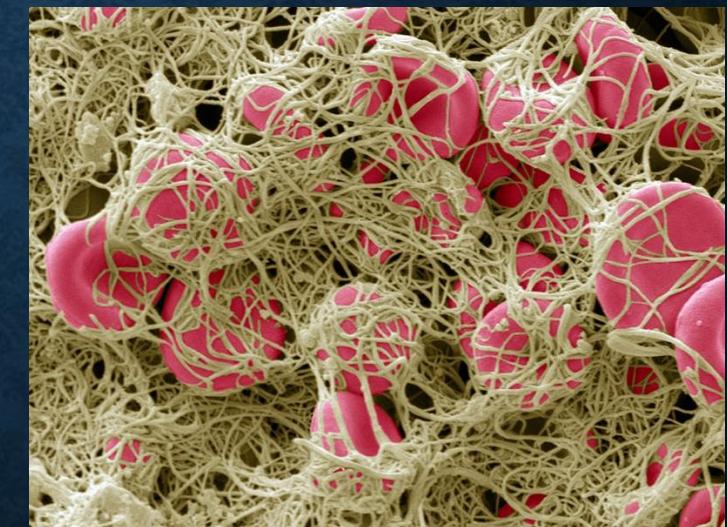
— More data are needed, but thromboembolic risk appears to have dropped

by Amanda D'Ambrosio, Enterprise & Investigative Writer, MedPage Today January 24, 2022

The latest on the coronavirus pandemic and the Omicron variant

By Adrienne Vogt, Aditi Sangal, Meg Wagner and Melissa Macaya, CNN

Updated 0055 GMT (0855 HKT) December 17, 2021



CAZURI CLINICE

- Eco-Doppler mm infer (venos)
- Ecografie pulmonara
- Anamneza tintita (tuse, febra, cand a debutat TV?...etc...)
- CT toracic
- Teste serologice (Teste rapide Ag/Ac, rt-PCR)
- D-dimeri (valori impresionante corelabile cu severitatea af pulmonare-nu cu extensia trombozei!)
- Sdr biologic inflamator (CRP, Fibrinogen)
- Limfopenie!

CAZ CLINIC 1

I. Elena, 72 ani

Doppler:

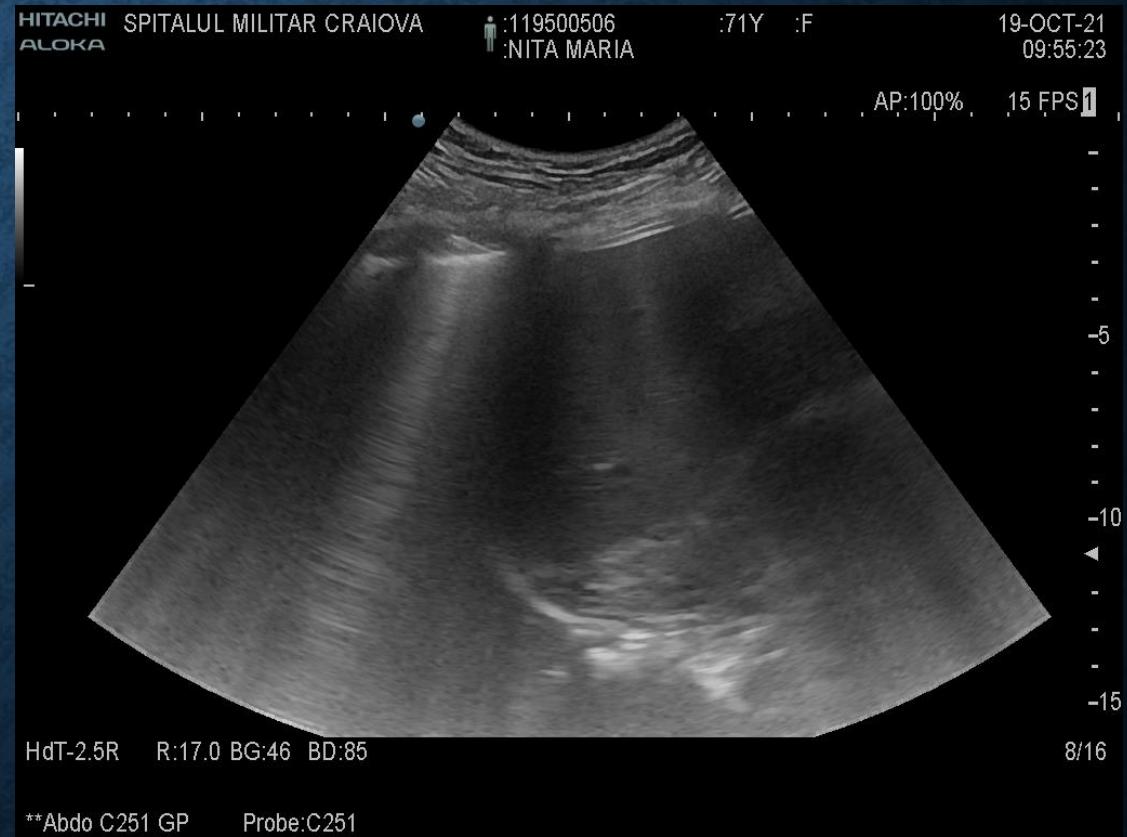
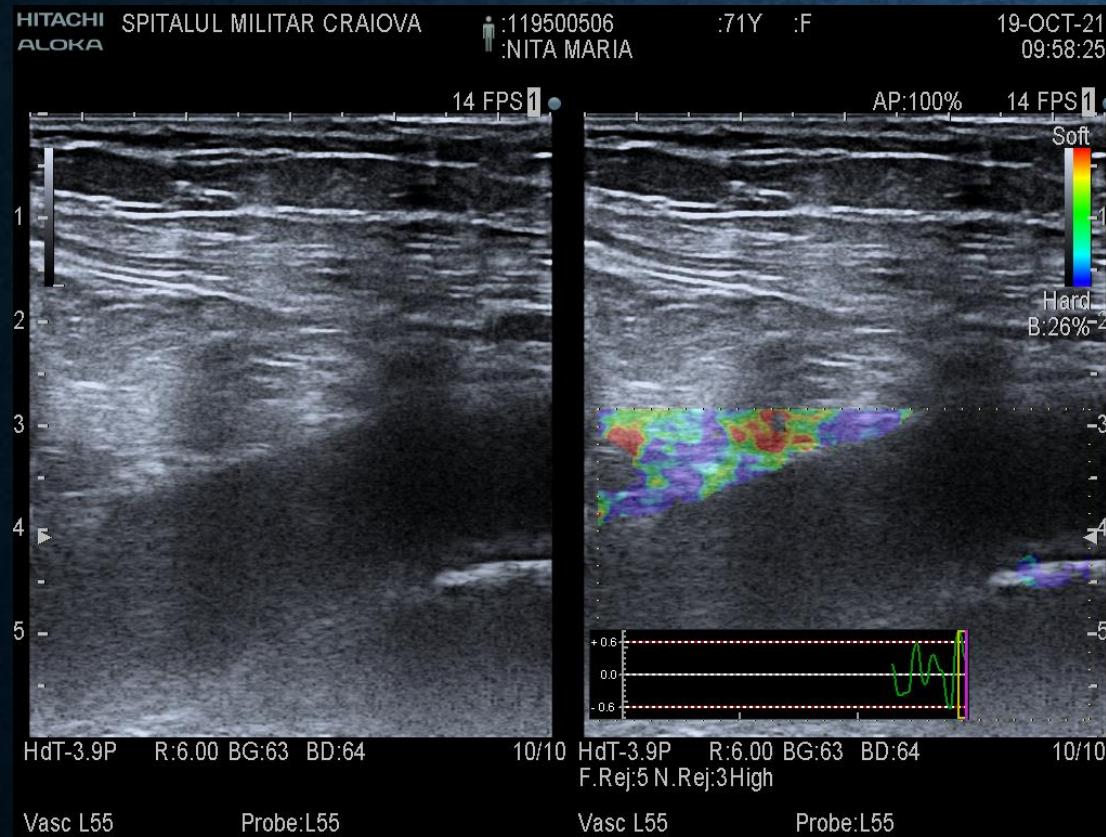
tromboza masiva ileo-fem pop stg + tromboza

V. Safene interne de la JSF



CAZ CLINIC 2

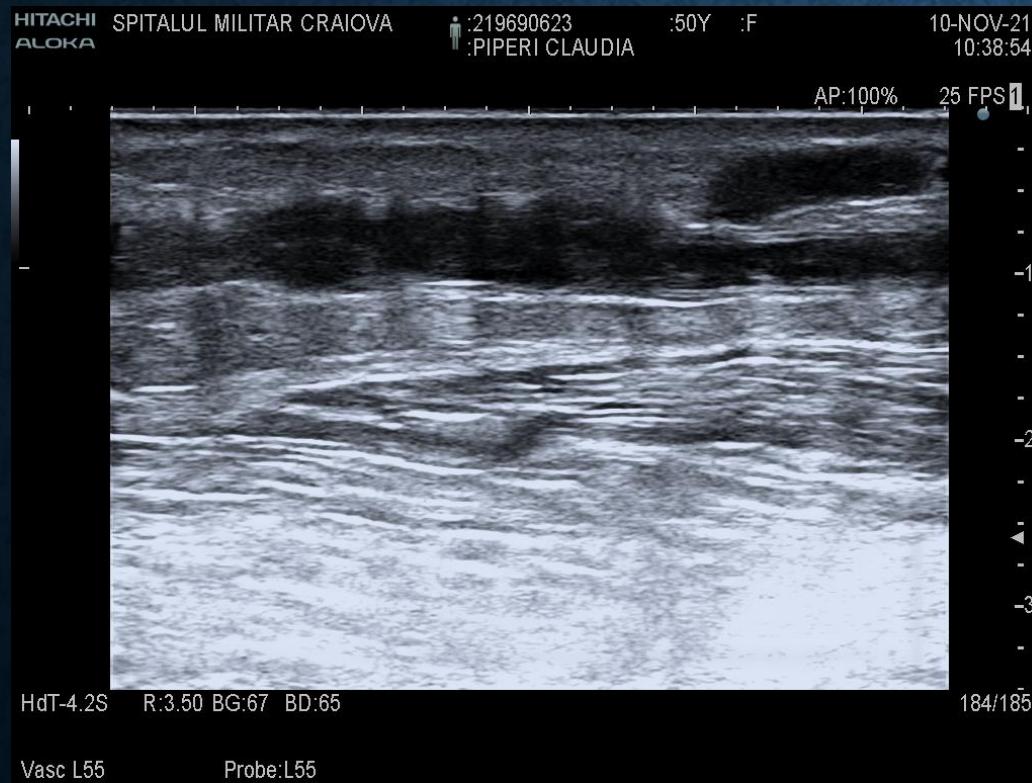
N. Maria, 71 ani, TVP fem-pop la 14 zile post Covid 19
Tratament cu ASPENTER la domiciliu



CAZ CLINIC 3

P. Claudia, 50 ani

Tromboflebita superf. (recidivata) in infectia SARS Cov 2



ASOCIEREA COVID-19/TVP

- In formele severe: furtuna de citokine
- In formele oligo/asimptomatice de Covid-19: alte mecanisme
• (endotelita? Status procoagulant?)
- Alte cauze:
 - neoplazii, boli hematologice
 - extinderea planului de investigatii

Obs. personala:

- rezistenta la tratamentul anticoagulant!
 - interesare vasculara complexa (prof si superf/perforante)
- Formele superficiale sunt rar izolate! Necesita anticoagulare!