



PRO VEŘEJNOST

20. 7.

TEČKA ZA PANDEMIÍ: POSTCOVIDOVÝ SYNDROM

Science

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136



SARA GIRONI CARNEVALE

Scientists are drowning in COVID-19 papers. Can new tools keep them afloat?

By Jeffrey Brainard | May. 13, 2020 , 12:15 PM

Očkování mRNA vakcínami: Legální genocida? Jak zlikvidovat 30 % světové populace. Statistika: Očkovaní umírají na covid-19 až osmkrát častěji. Vakcinace jednoznačně přispívá k šíření infekce. Depopulace v přímém přenosu



Tisk článku



Poslat e-mailem

12. 7. 2021

ALEXANDR SADOVNIKOV přináší dramatické pojednání o původu a účincích mRNA vakcín, jejichž pravým smyslem má být likvidace miliard „nadbytečných“ lidí po celé planetě Zemi

Nyní, když máme k dispozici statistické údaje, můžeme s jistotou tvrdit, že západní mRNA vakcíny jsou nejen zdravotně nebezpečné, ale představují také pro očkované osoby nášlapnou minu se zpožděným účinkem. Konkrétně – pozdější vedlejší účinky v podobě vzniku rakoviny a dalších onemocnění spojených s násilným zmanipulováním genetické struktury organismu.



Očkování snadněji onemocní

Mutace delta koronaviru je mnohem nebezpečnější pro očkované než pro neočkované. Nejdříve však několik velmi znepokojivých zpráv. Americký úřad pro sanitární regulaci v potravinářství (Food and Drug Administration, FDA) oznámil, že byla doplněna průvodní

REKLAMA



Máte knihy, co už nechcete?



PROTIPROUD

ParlamentníListy.cz » Aréna » Rozhovory » Primář Bernátek: Téměř celý svět se s prominutím zbláznil. Covid m

Ing. et Ing. Jiří Korec (primátor Zlín) vložil nový článek [Autobusové nádraží ve Zlíně bude bez nepříznupůsobivých c](#)

Primář Bernátek: Téměř celý svět se s prominutím zbláznil. Covid média zbytečně zdramatizovala

31.05.2021 18:25 | Rozhovor

Primář a předseda okresního sdružení České lékařské komory ve Zlíně Jaromír Bernátek patří od začátku pandemie covidu-19 k těm lékařům, kteří nepropadli hysterii. „Začali jsme se v jistém smyslu chovat, jako by nemoci a smrt dříve neexistovaly. Stali jsme se v

**Je to mediální virus.
Vakcíny jsou jen
byznys, říká rektor
Univerzity Karlovy**





Credit: Cristina Spanò

Information Overload Helps Fake News Spread, and Social Media Knows It

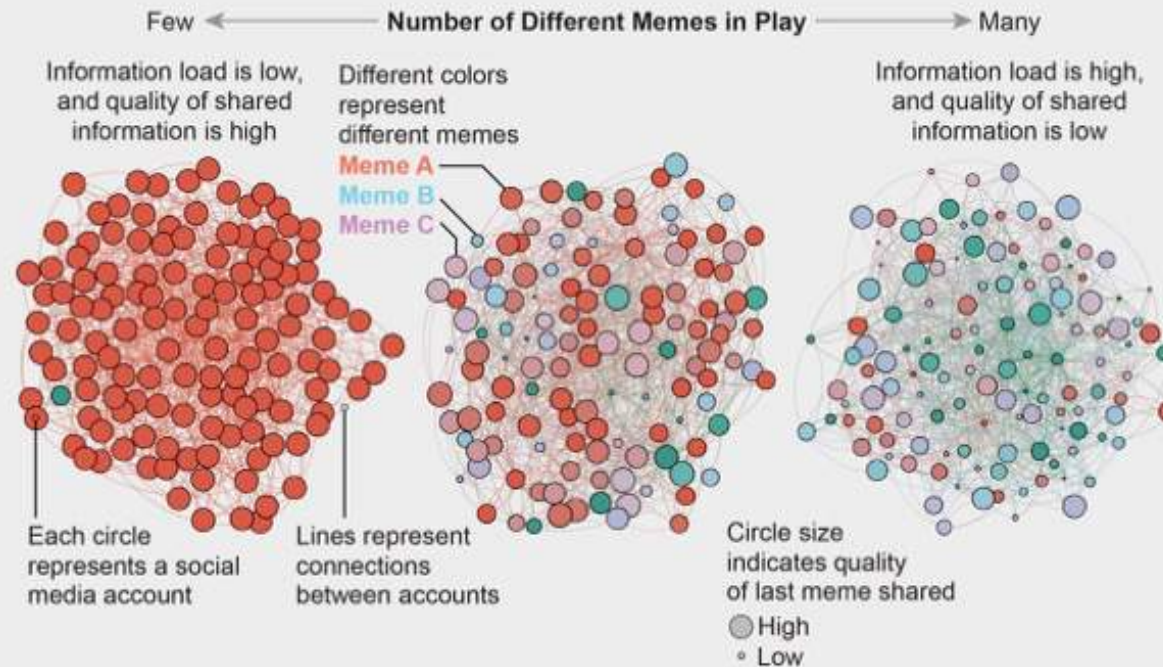


December 1, 2020

Understanding how algorithm manipulators exploit our cognitive vulnerabilities empowers us to fight back

Information Overload

Our social media newsfeeds are often so full that many of us can view only the top few items, from which we choose to reshare or retweet. Researchers at the Observatory on Social Media (OSoMe) at Indiana University Bloomington simulated this limited capacity to pay attention. Each node in the model network represents a user, linked by lines to friends or followers who receive the items they share or reshare. Investigators found that as the number of memes in the network rises (*toward the right*), the quality of those that propagate widely falls (*circles become smaller*). So information overload can alone explain why fake news can become viral.



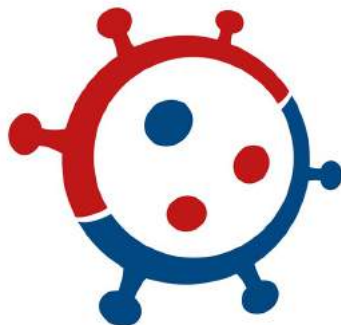
Credit: "Limited individual attention and online virality of low-quality information," By Xiaoyan Qiu et al., in *Nature Human Behaviour*, Vol. 1, June 2017

Co se děje po akutním COVIDu?

Vladimír KOBLÍŽEK, Michal KOPECKÝ, Mikuláš SKÁLA a kolektiv

Plicní klinika FN HK, LF HK UK

ČPFS ČLS JEP, ÚZIS ČR



**CENTRUM
POSTCOVIDOVÉ
PÉČE**

FAKULTNÍ NEMOCNICE
HRADEC KRÁLOVÉ



COVID-19

- **Virové onemocnění** (od roku 2019 dosud ve formě globální epidemie)
- Postihuje respirační buňky a **vede k zápalu plic** (pneumonii)
- **Bezpríznakový** průběh (vice mladí a/nebo těhotné)
- **Příznakový** průběh (většina ostatních) – příznaky mohou přijít postupně
- Mírný průběh může být komplikován **rychlým zhoršením** (hodiny)
- Někdy si **nemocný neuvědomuje tíži postižení** (nevnímá poruchu dechu)
- **Další fáze** onemocnění (trombózy různých typů)
- Někdy (u menšiny pacientů) **následky** déle než 4 týdny
- **Raritně** nevratné změny (analogie se SARS)

PRŮBĚH
COVID-19

This is an axial CT scan of the chest. The image shows a cross-section of the lungs with significant bilateral opacities, particularly in the peripheral and posterior regions, which are characteristic of COVID-19 pneumonia. The central airways and vascular structures are visible. The text 'PRŮBĚH COVID-19' is overlaid in the center of the image.

NIC..RESPIRAČNÍ INFEKCE RŮZNÉ INTENZITY



A close-up photograph of a snail moving across a red brick wall. The snail's shell is a mix of yellow and brown with dark concentric rings. Its body is a dark, mottled greenish-brown. Two long eye stalks are extended forward. The snail is positioned in the upper right quadrant of the frame. The background consists of red bricks with grey mortar. In the bottom left corner, there is a wooden surface.

NĚKDY TROMBÓZA
ev.DLOUHOTRVAJÍCÍ DOPADY

Příčiny dlouhotrvajících dopadů

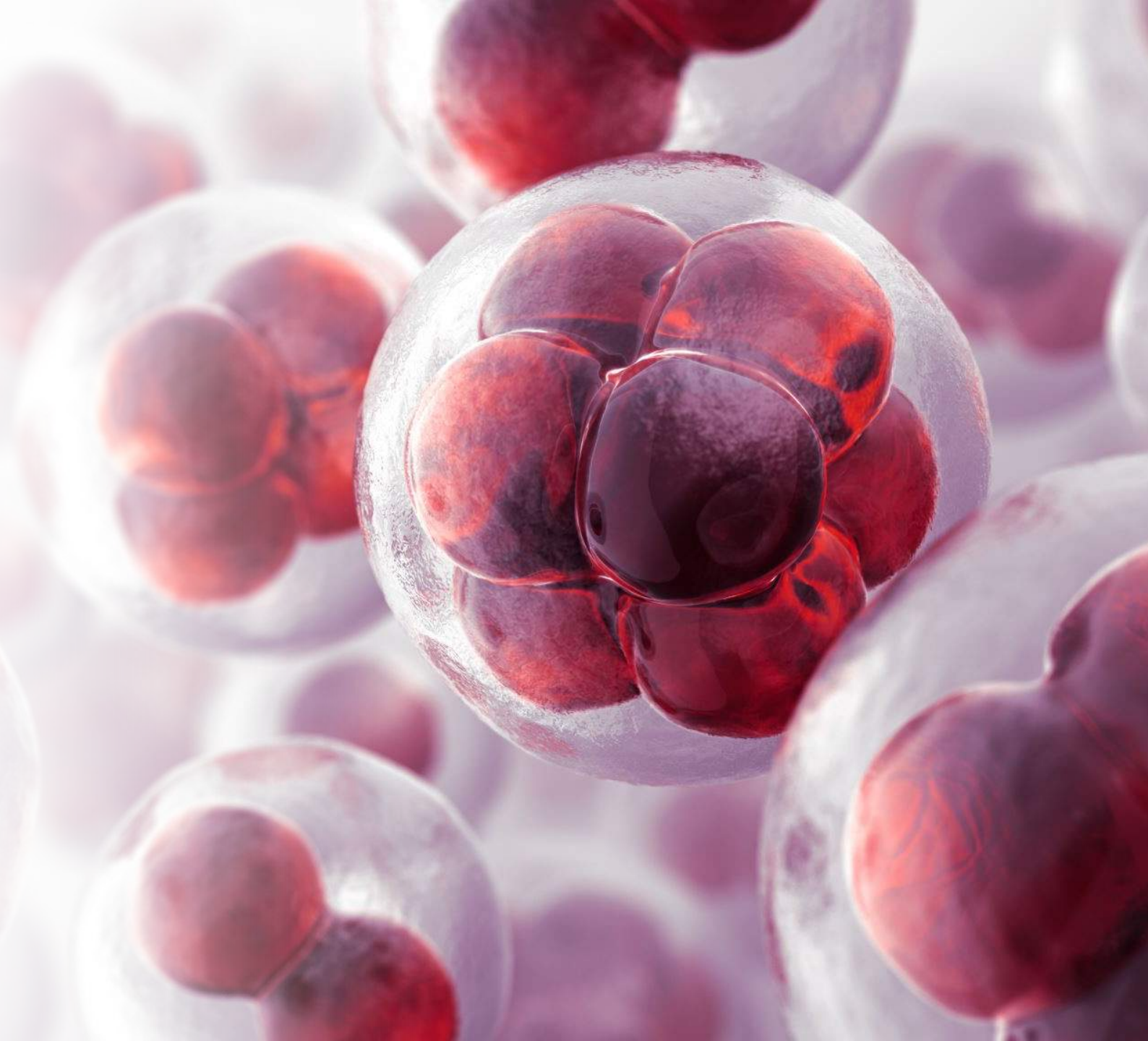
Přímé působení viru

Hypoxémie poškozující buňky

Zánět/trombóza poškozující
buňky/orgány

Poškození plic a dýchacích cest
těžkou formou onemocnění

Změna způsobů dýchání
u mírných forem



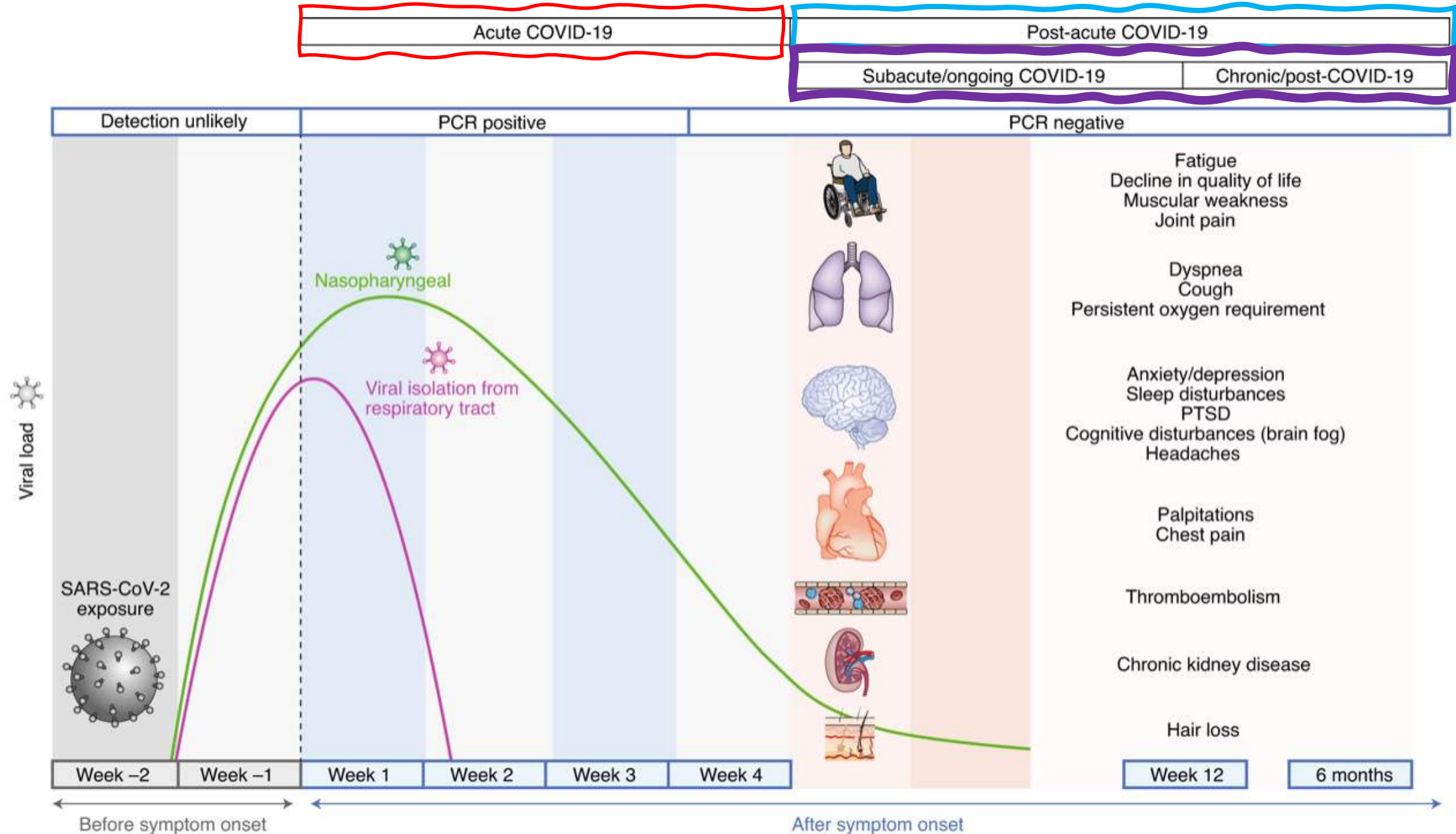
A pair of black-rimmed glasses with round lenses is resting on a stack of books. A red bookmark is visible on the left side of the stack. The word "TERMINOLOGIE" is overlaid in white capital letters in the center of the image.

TERMINOLOGIE

Definice COVID následků

- **AKUTNÍ COVID** – obvykle končí do 4 týdnů od symptomů/dg.
- **POST-AKUTNÍ COVID** – perzistující symptomy a/nebo opožděné či dlouhodobé komplikace (následky) po více jak 4 týdnech od vzniku symptomů





NICE UK Dec 2020

M.Kopecký a kol. Poziční dokument ČPFS ČLS JEP leden 2021

<https://www.nature.com/articles/s41591-021-01283-z#Fig1>

A close-up photograph of a laboratory setting. In the foreground, a multi-well microplate is visible, with some wells containing a pink liquid. Above the plate, several glass pipettes are suspended, each with a drop of clear liquid hanging from its tip. The background is a soft-focus gradient of green and blue. The word "EPIDEMIOLOGIE" is overlaid in white, bold, sans-serif capital letters in the center of the image.

EPIDEMIOLOGIE

Pravděpodobný výskyt 5% až 10% post-COVID

All Time

Past Day

Past Week

Past Month

Confirmed Cases

1 670 583

Deaths

30 335

84.000 až 168.000 post-COVID



VACCINE TRACKER

[Learn more about vaccines >](#)

Doses Administered

9,442,966

People Fully Vaccinated

4,106,181

% of Population Fully
Vaccinated

38.48%

VÝVOJ POST-COVID V ČASE



A photograph of several fresh carrots with their green leafy tops, resting on a weathered wooden plank surface. The carrots are orange and have some dark spots, possibly from soil. The text "KLINICKÉ PŘÍPADY" is overlaid in white, sans-serif capital letters in the center of the image.

KLINICKÉ PŘÍPADY

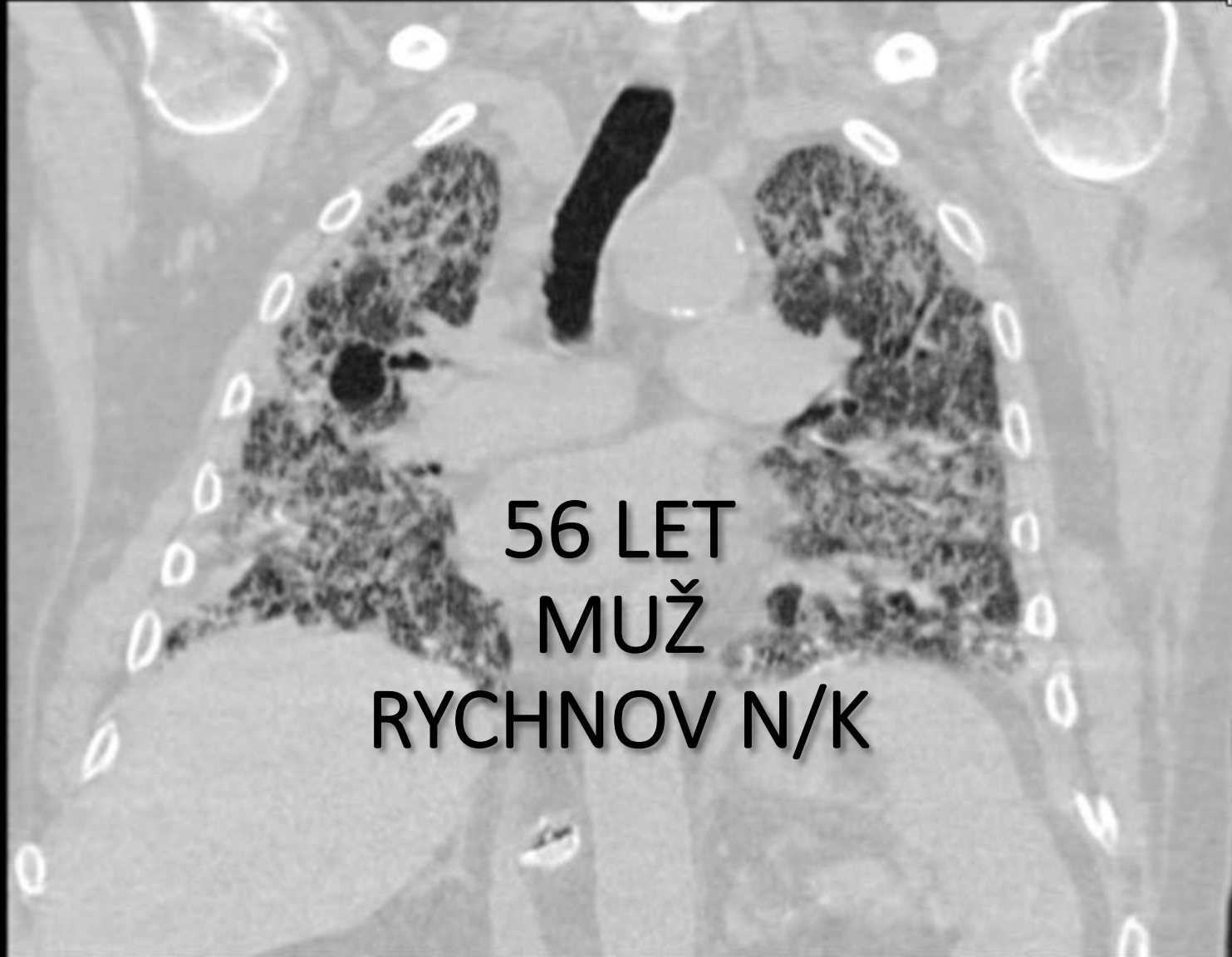
po 12 T

RDG CENTRUM Rychnov n. K.

Study 2021-04-08 / 09:24:37

Image Time 09:29:23

HRCT PLIC



56 LET
MUŽ
RYCHNOV N/K

Zvětšení 1,60
Šířka: 1515
Střed: -390
SP 13.21437836
KV 120
mA 435
mAs 13

SL 1.5
CORONAL NI

ženaťy .dôchodca

Prestance 5 mg 1/2 -0-0, Oma
negat

po 11 T

26.1.2021 Covisd pozitívny

alergie na lieky neudáva,alergia na pele.

pri vedomí, orientovaný, poloha aktíva habitus
orientačne oRL a neurologicky v norme. Oči: sp
orofarynx v kľude. Krk: šija neoponuje, LU a š.ž
zhojená Hrudník: Pulmo. dýchanie vezikulárne
jasný, Cor. AS pravidelná, 100/min, , ozvy ohrar
opuchov, varixov, Homans negatívny. sat 96%

rtg hrudníka: 14.4.2021 vpravo nástenne PH
101x85 s hladinkou na 37 mm, vľavo pľ pare
plochá, vpravo sa nediferencuje, stredný tie
Spirometria kontraindikovaná

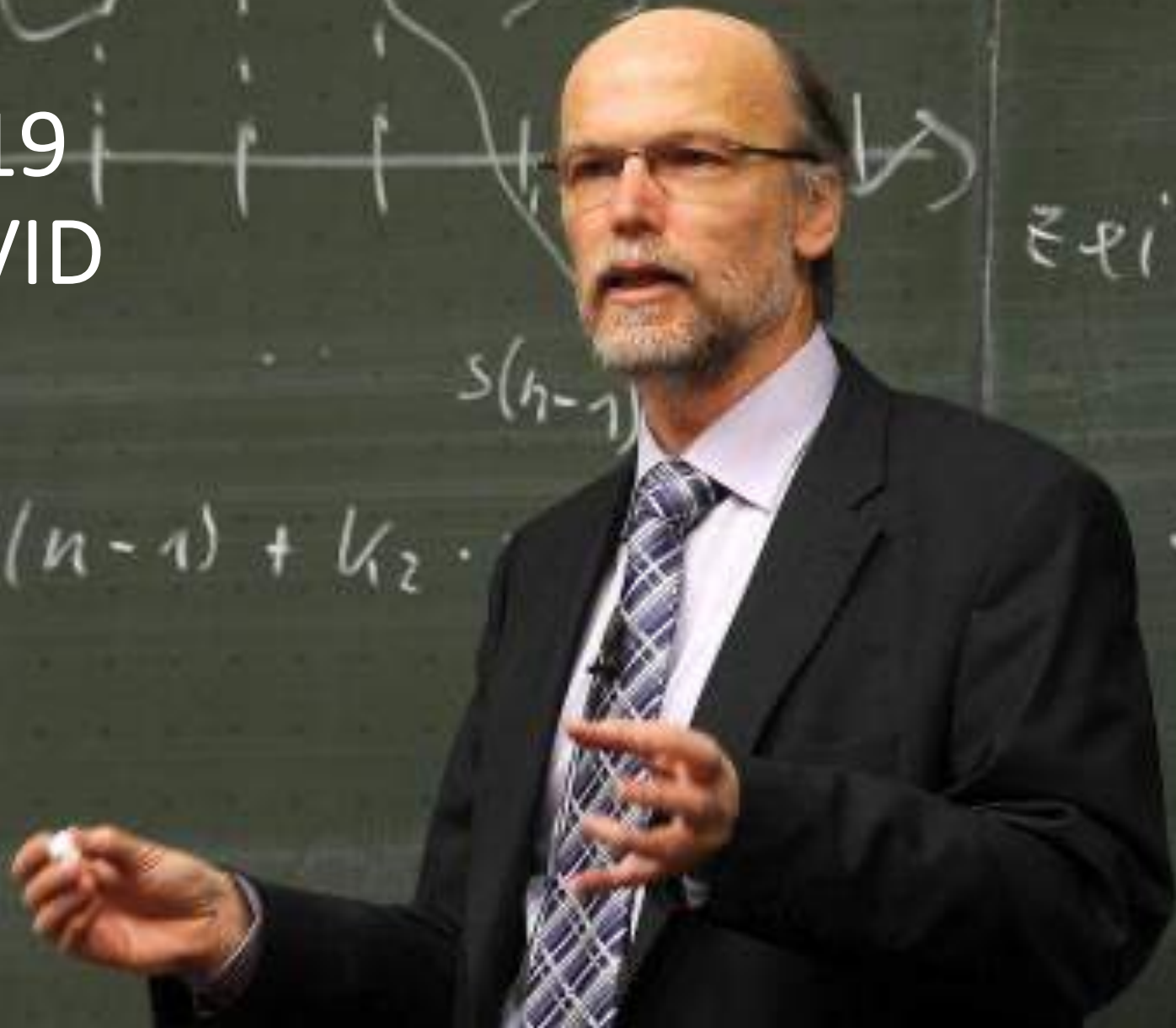
Obojstranná Covidová pnemónia v čiastočnej
Absces pravého dolného laloka
Susp nástenný PNO l. dx



70 LET
MUŽ
BRATISLAVA

51 LET MUŽ HK MÍRNÝ COVID-19 TĚŽKÝ post-COVID

po 4M



po 4M

image 111
Thorax^02_HRCT_spiral_1

52 LET
ŽENA
NYMBURK



po 4M

47 LET
MUŽ
RYCHNOV N/K



DŮKAZY (EBM)
EXISTENCE post-COVID

Analogie COVID-19

Závažné virové
pneumonie – prasečí
chřipka (HRCT změny)

Závažné koronavirové
pneumonie – SARS
(cévní následky, post-SARS)



J of Radiology, 85 (2012), 729–735

valuation of high-resolution CT findings in patients with pneumonia in novel swine-origin influenza A (H1N1) virus infection

, PhD, ¹J-F ZHANG, BSc, ¹X-D XIA, MSc, ²D-J SU, PhD, ¹B-L LIU, ¹D-L ZHAO, ³Y LIU, PhD and ⁴D-H ZHAO

Department of Radiology, the Second Affiliated Hospital of Harbin Medical University, Harbin, China, ²Department of Respiratory Medicine, the Second Affiliated Hospital of Harbin Medical University, Harbin, China, ³The Department of Statistics, Harbin Medical University, Harbin, China, and ⁴Centers for Disease Control and Prevention of Heilongjiang, Harbin, China

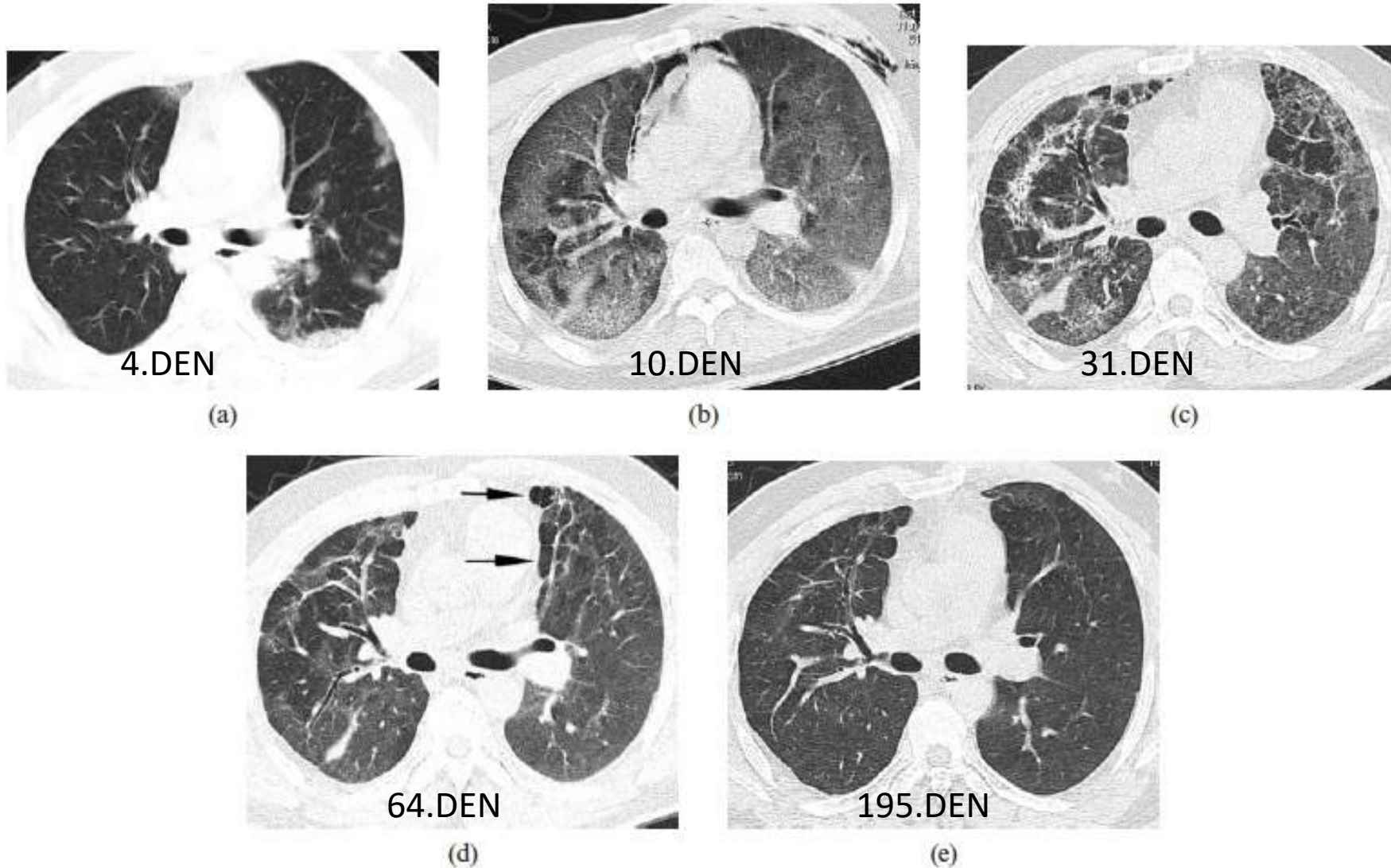


Figure 4. Transverse thin-section CT scans in 34-year-old male with laboratory-confirmed swine-origin influenza A (H1N1). (a) Scan obtained on day 4 of illness shows a peripheral distribution of **patchy ground-glass opacities** (GGOs). With progression of symptoms, he was admitted to the intensive care unit on the sixth day of illness for mechanical ventilation. (b) Scan obtained on day 10 of illness shows **diffuse bilateral GGOs**; **areas of consolidation** predominately in subpleural and dependent lung regions. (c) Scan obtained on day 31 of illness shows **irregular linear opacities** that developed in the areas of GGOs. (d) Scan obtained on day 64 of illness shows that reticulation superimposed on GGOs persisted, although reduced in extent. **Mosaic hypoattenuation** (arrows) suggestive of **air trapping** in the ventral and subpleural lung regions can be seen. (e) Scan obtained on day 195 of illness shows resolution of **fibrosis and air trapping**.

June 25, 2007

One-Year Outcomes and Health Care Utilization in Survivors of Severe Acute Respiratory Syndrome

Catherine M. Tansey, MSc; Marie Louie, MD; Mark Loeb, MD; et al

[» Author Affiliations](#) | [Article Information](#)

Arch Intern Med. 2007;167(12):1312-1320. doi:10.1001/archinte.167.12.1312



Background Severe Acute Respiratory Syndrome (SARS) became a global epidemic in 2003. Comprehensive information on 1-year outcomes and health care utilization is lacking. Research conducted during the SARS outbreak may help inform research planning for future public health emergencies. The objective of this study was to evaluate the 1-year outcomes in survivors of SARS and their family caregivers.

Method The study was prospective and observational. We evaluated 117 SARS survivors from Toronto, Ontario. Patients were interviewed and underwent physical examination, pulmonary function testing, chest radiography, a 6-minute-walk test, quality-of-life measures, and self-report of health care utilization. At 1 year, informal caregivers were identified for a survey on caregiver burden.

Results The enrolled survivors of SARS were young (median age, 42 years), and most were women (67%) and health care workers (65%). At 1 year after hospital discharge, pulmonary function measures were in the normal range, but 18% of patients had a significant reduction in distance walked in 6 minutes. The Medical Outcomes Study 36-Item Short Form Health Survey (SF-36) domains were 0.3 to 1.0 SD below normal at 1 year. Of the patients, 17% had not returned to work by 1 year. Fifty-one patients required 668 visits to psychiatry or psychology practitioners. During the SARS epidemic, informal caregivers reported a decline of 1.6 SD below normal on the mental component score of the SF-36.

Pestré klinické projevy po COVID

Case Reports > Cureus. 2020 Dec 26;12(12):e12301. doi: 10.7759/cureus.12301.

A Case of Post-COVID-19 Subacute Thyroiditis

Maham A Mehmood ¹, Monica Bapna ¹, Mahnoor Arshad ²

Affiliations + expand

PMID: 33510992 PMCID: PMC7832738 DOI: 10.7759/cureus.12301

[Free PMC article](#)

Abstract

Subacute thyroiditis is usually a self-limiting inflammatory condition. The clinical presentation varies from person to person, but usually includes neck pain or discomfort and a painful diffuse goiter. There is at times a transient episode of hyperthyroidism followed by euthyroidism and sometimes hypothyroidism. We describe the case of a previously healthy 29-year-old female presenting with symptoms consistent with subacute thyroiditis. The patient had recently recovered from a mild episode of COVID-19 infection. Labs and imaging were consistent with the clinical diagnosis of subacute thyroiditis. The patient was provided symptomatic treatment with prednisone and atenolol and had an uneventful recovery.



Rare cutaneous manifestation of COVID-19

Lisa Killian ¹, Paula Evelyn Beatty ², Asad Salim ²

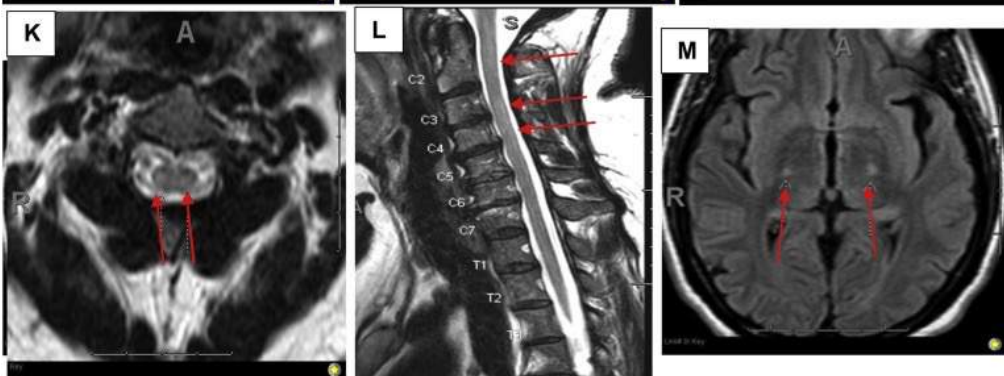
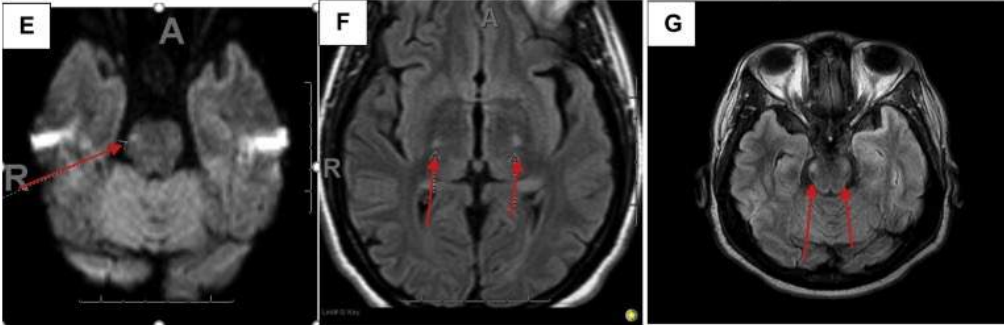
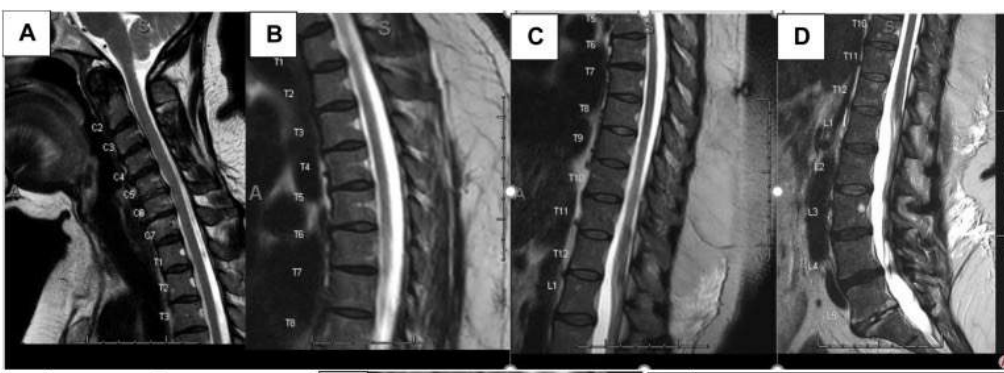
Affiliations + expand

PMID: 33509895 PMCID: PMC7844926 DOI: 10.1136/bcr-2020-240863

[Free PMC article](#)

Abstract

The COVID-19 pandemic has resulted in an incomparable disease burden worldwide. One of the main contributors stems from the multisystem inflammatory syndrome associated with SARS-CoV-2 infection. The numbers of those affected continue to rise with the increasing number of confirmed COVID-19 cases. However, we are yet to fully comprehend the risk factors, disease progression and prognosis for individuals affected. We describe a case of a previously healthy 17-year-old boy who tested positive for the SARS-CoV-2 virus. He presented with a 5-day history of mild influenza-like symptoms, however, quickly required ventilatory support in the intensive care unit. Two months postdischarge, he developed an isolated petechial rash on his palms and soles. His cutaneous presentation was in association with a mixed sensorimotor peripheral neuropathy, debilitating neuropathic pain and intermittent respiratory distress. We postulate that cutaneous manifestations post-COVID-19 could be indicative of the newly identified multisystem inflammatory syndrome.



> Clin Neurol Neurosurg. 2021 Jan 22;202:106513. doi: 10.1016/j.clineuro.2021.106513. Online ahead of print.

Late-onset rapidly progressive MRI- negative- myelitis after COVID-19 illness

Anza B Memon ¹, Rami Al-Hader ², Suresh Patel ³, Shaneela Malik ⁴, Mary Megally ², Kara L Steijlen ², Ritika R Suri ², John Corrigan ³

Affiliations + expand

PMID: 33517162 PMCID: PMC7825887 DOI: 10.1016/j.clineuro.2021.106513

Free PMC article

Abstract

- Atypical myelitis due to delayed immune-mediated pathogenesis in response to the SARS-CoV-2 virus or antiviral antibodies.
- This case highlights the need for physician vigilance in recognizing late onset post-COVID-19 myelitis.
- MRI negative partial myelitis that progressed to complete myelitis.



Za vším po COVID není post-COVID

Prevalence and correlates of chronic fatigue syndrome and post-traumatic stress disorder after the outbreak of the COVID-19

Leila Simani¹, Mahtab Ramezani², Ilad Alavi Darazam³, Mastrooreh Sagharichi¹, Mohammad Amin Aalipour¹, Fatemeh Ghorbani¹, Hossein Pakdaman⁴

Affiliations + expand

PMID: 33528827 PMCID: [PMC7852482](#) DOI: [10.1007/s13365-021-00949-1](#)

[Free PMC article](#)

Abstract

As the SARS-CoV-2 becomes a global pandemic, many researchers have a concern about the long COVID-19 complications. Chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) is a persistent, debilitating, and unexplained fatigue disorder. We investigated psychological morbidity such as CFS and post-traumatic stress disorder (PTSD) among survivors of COVID-19 over 6 months. All COVID-19 survivors from the university-affiliated hospital of Tehran, Iran, were assessed 6 months after infection onset by a previously validated questionnaire based on the Fukuda guidelines for CFS/EM and DSM-5 Checklist for PTSD (The Post-traumatic Stress Disorder Checklist for DSM-5 or PCL-5) to determine the presence of stress disorder and chronic fatigue problems. A total of 120 patients were enrolled. The prevalence rate of fatigue symptoms was 17.5%. Twelve (10%) screened positive for chronic idiopathic fatigue (CIF), 6 (5%) for CFS-like with insufficient fatigue syndrome (CFSWIFS), and 3 (2.5%) for CFS. The mean total scores in PCL-5 were 9.27 ± 10.76 (range:0-44), and the prevalence rate of PTSD was 5.8%. There was no significant association after adjusting between CFS and PTSD, gender, comorbidities, and chloroquine phosphate administration. The obtained data revealed the prevalence of CFS among patients with COVID-19, which is almost similar to CFS prevalence in the general population. Moreover, PTSD in patients with COVID-19 is not associated with the increased risk of CFS. Our study suggested that medical institutions should pay attention to the psychological consequences of the COVID-19 outbreak.



> [Graefes Arch Clin Exp Ophthalmol.](#) 2021 Feb 1;1-9. doi: [10.1007/s00417-020-05070-3](#).
Online ahead of print.

Retinal capillary involvement in early post-COVID-19 patients: a healthy controlled study

Maria Cristina Savastano^{1 2}, Gloria Gambini^{1 2}, Grazia Maria Cozzupoli^{1 2}, Emanuele Crincoli^{3 4}, Alfonso Savastano^{1 2}, Umberto De Vico^{1 2}, Carola Culiersi^{1 2}, Benedetto Falsini^{1 2}, Francesco Martelli⁵, Angelo Maria Minnella^{1 2}, Francesco Landi^{2 6}, Francesco Cosimo Pagano^{2 6}, Stanislao Rizzo^{1 2 7}, Gemelli Against COVID-19 Post-Acute Care Study Group



Background: Systemic vascular involvement in COVID-19 has been identified in several patients: not only endothelial derangement and increased permeability are reported to be early hallmarks of organ damage in patients with COVID-19 but are also the most important cause of worsening of clinical conditions in severe cases of SARS-CoV-2 infection. There are several reasons to hypothesize that the eye, and the retina in particular, could be a target of organ damage in SARS-CoV-2 infection.

Methods: This cohort observational study analyzes OCT angiography and structural OCT of 70 post-COVID-19 patients evaluated at 1-month hospital discharge and 22 healthy control subjects. Primary outcomes were macular vessel density (VD) and vessel perfusion (VP); structural OCT features were evaluated as secondary outcomes. In addition, patients and healthy volunteers were evaluated for best corrected visual acuity, slit lamp photograph, and fundus photo image.

Results: VD and VP in 3×3 and 6×6 mm scans for SCP and DCP showed no significant differences between the groups. Similarly, CMT and GCL did not reveal significant differences between post-COVID-19 and healthy patients. Nine patients (12.9%) featured retinal cotton wool spots and 10 patients had vitreous fibrillary degeneration. The prevalence of epiretinal membrane and macular hole was similar in the two groups. One case of extra papillary focal retinal hemorrhage was reported in the post-COVID-19 group.

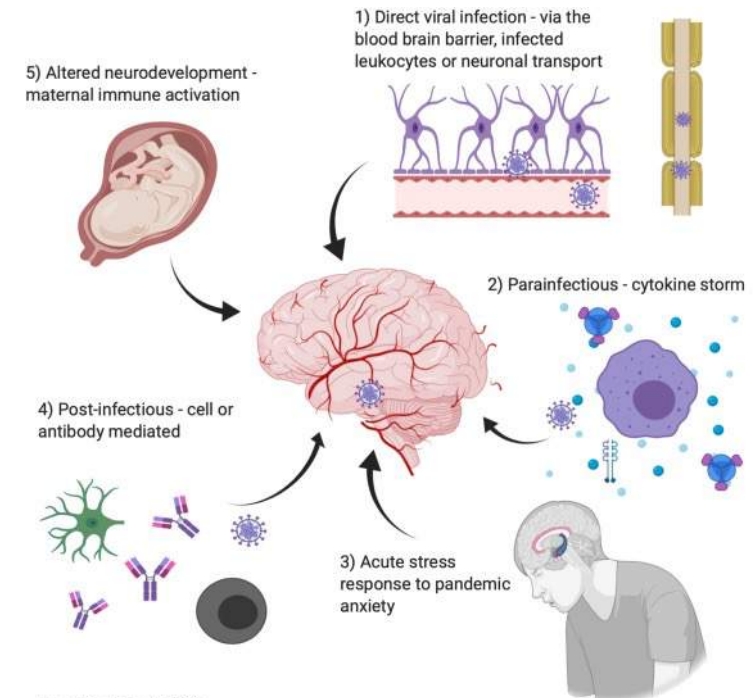
Conclusions: Macula and perimacular vessel density and perfusion resulted unaltered in mild post-COVID-19 patients at 1-month hospital discharge, suggesting no or minimal retinal vascular involvement by SARS-CoV-2.

Pestré příčiny postižení po COVID (CNS)

> [Aust J Gen Pract.](#) 2021 Jan 12;50. doi: 10.31128/AJGP-COVID-43. Online ahead of print.

COVID-19 and long-term neurological problems: Challenges ahead with Post-COVID-19 Neurological Syndrome

Tissa Wijeratne ¹, Sheila Crewther ²



Adapted from Ellul et al., 2020

Created using biorender.com

Dlouhodobé důsledky COVID-19

medRxiv

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More than 50 Long-term effects of COVID-19: a systematic review and meta-analysis

Sandra Lopez-Leon, Talia Wegman-Ostrosky, Carol Perelman, Rosalinda Sepulveda, Paulina A Rebolledo, Angelica Cuapio, Sonia Villapol

doi: <https://doi.org/10.1101/2021.01.27.21250617>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

15 studií s nejméně 100 pts

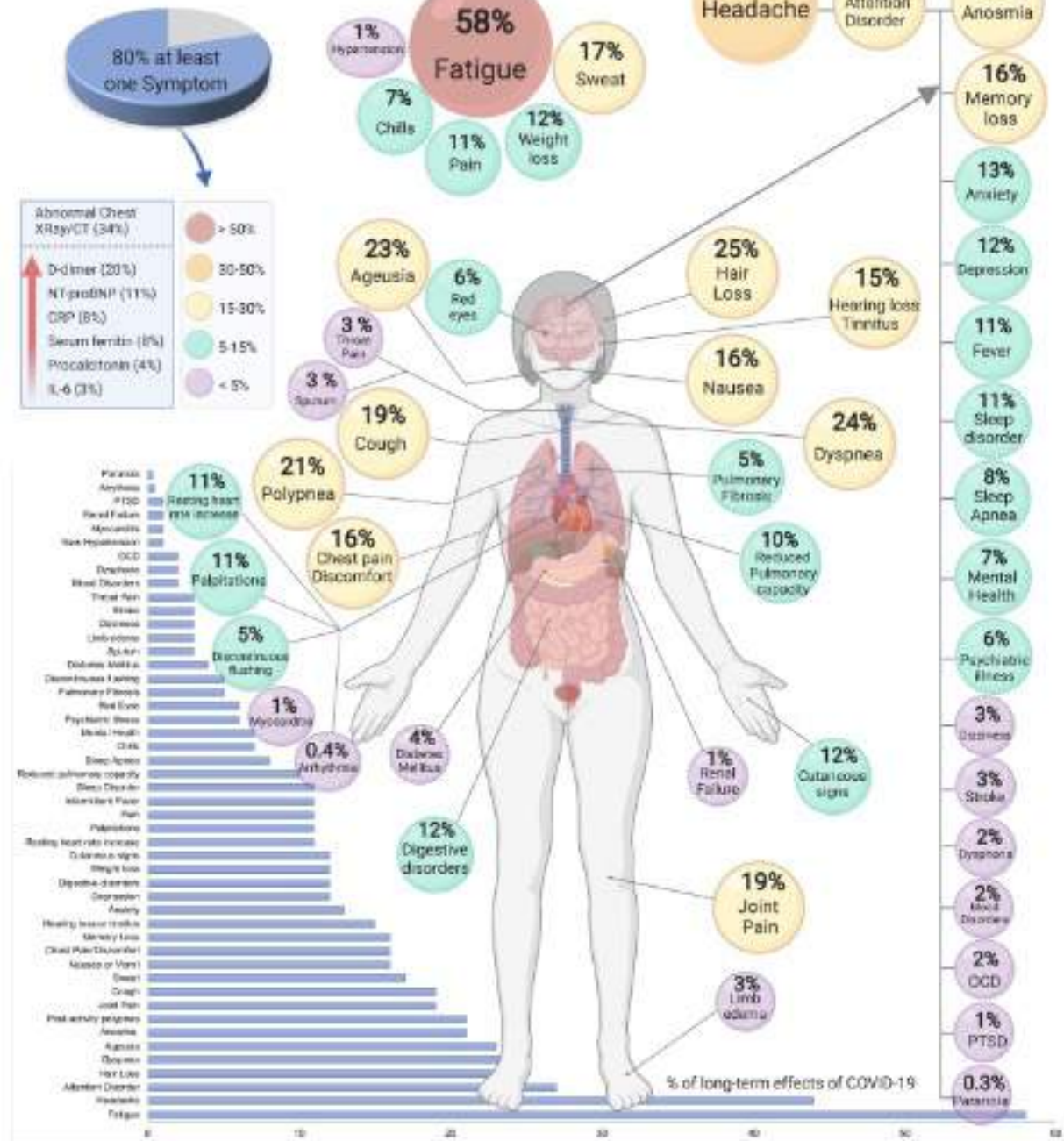
47.910 pts

2-15 týdnů po COVID

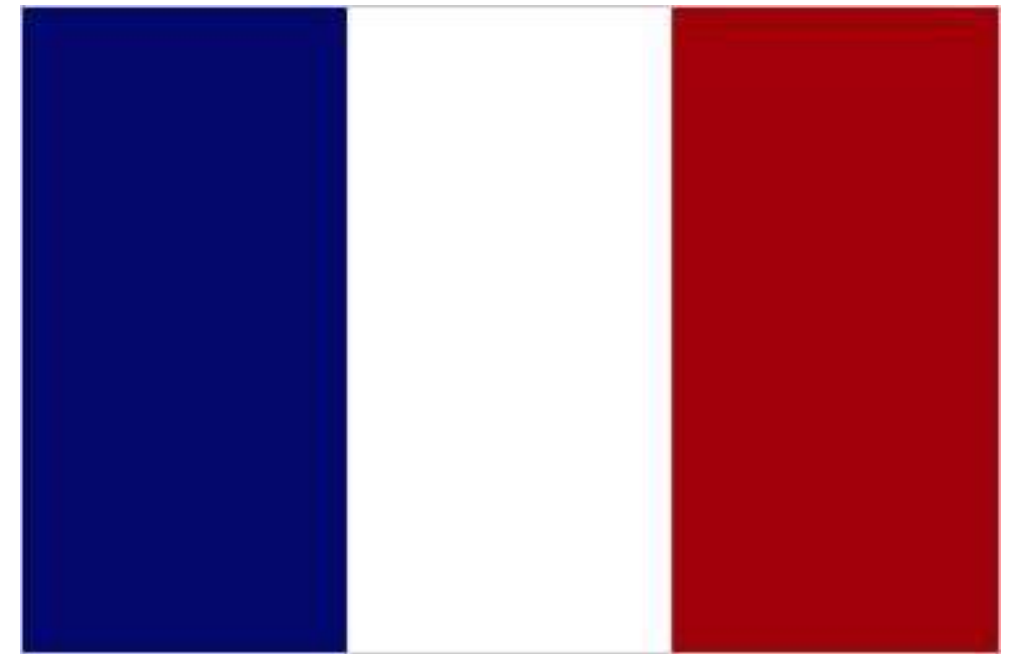
80 % pts udává symptomy



Long-term effects of COVID-19



Někdy i následky mírného COVID-19



> [Front Physiol.](#) 2021 Jan 18;11:614590. doi: 10.3389/fphys.2020.614590. eCollection 2020.

Hyperventilation: A Possible Explanation for Long-Lasting Exercise Intolerance in Mild COVID-19 Survivors?

Justina Motiejunaite ^{1, 2}, Pauline Balagny ^{1, 3}, Florence Arnoult ¹, Laurence Mangin ^{1, 4}, Catherine Bancal ¹, Marie-Pia d'Ortho ^{1, 2}, Justine Frija-Masson ^{1, 2}

Affiliations + expand

PMID: 33536937 PMID: PMC7849606 DOI: 10.3389/fphys.2020.614590

Abstract

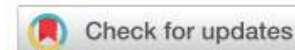
Since the outbreak of the coronavirus (COVID-19) pandemic, most attention has focused on containing transmission and addressing the surge of critically ill patients in acute care settings. As we enter the second phase of the pandemic, emphasis must evolve to post-acute care of COVID-19 survivors. Persisting cardiorespiratory symptoms have been reported at several months after the onset of the infection. Information is lacking on the pathophysiology of exercise intolerance after COVID-19. Previous outbreaks of coronaviruses have been associated with persistent dyspnea, muscle weakness, fatigue and reduced quality of life. The extent of Covid-19 sequelae remains to be evaluated, but persisting cardiorespiratory symptoms in COVID-19 survivors can be described as two distinct entities. The first type of post-Covid symptoms are directly related to organ injury in the acute phase, or the complications of treatment. The second type of persisting symptoms can affect patients even with mild initial disease presentation without evidence of organ damage. The mechanisms are still poorly qualified to date. There is a lack of correlation between initial symptom severity and residual symptoms at exertion. We report exercise hyperventilation as a major limiting factor in COVID-19 survivors. The origin of this hyperventilation may be related to an abnormality of ventilatory control, by either hyperactivity of activator systems (automatic and cortical ventilatory control, peripheral afferents, and sensory cortex) or failure of inhibitory systems (endorphins) in the aftermath of pulmonary infection. Hyperventilation-induced hypocapnia can cause a multitude of extremely disabling symptoms such as dyspnea, tachycardia, chest pain, fatigue, dizziness and syncope at exertion.

Dopady COVID po 2-6 měsících

nature
medicine

FOCUS | REVIEW ARTICLE

<https://doi.org/10.1038/s41591-021-01283-z>



Post-acute COVID-19 syndrome

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<https://www.nature.com/articles/s41591-021-01283-z#Fig1>

	Carfi et al. ³	Halpin et al. ²⁴	Carvalho-Schneider et al. ²¹	Chopra et al. ²⁰	Arnold et al. ²²	Moreno-Pérez et al. ²³	Moreno-Pérez et al. ²³	Garrigues et al. ²⁶	Huang et al. ⁵
Site	Italy	United Kingdom	France	United States	United Kingdom	Spain	Spain	France	China
Number of participants	143	100	150	488	110	277	277	120	1,733
Follow-up									
Duration	2 months post-symptom onset	1–2 months post-discharge	2 months post-symptom onset	2 months post-discharge	3 months post-symptom onset	2–3 months post-COVID-19 onset	4 months post-COVID-19 onset	3–4 months post-admission	6 months post-symptom onset
Mode of follow-up evaluation	In person	Telephone survey	Telephone survey	Telephone survey	In person	In person	In person	Telephone survey	In person
Baseline characteristics									
Age (years)	Mean (s.d.) = 56.5 (14.6)	Median (ward/ICU) = 70.5/58.5	Mean (s.d.) = 45 (15)	NR	Median (IQR) = 60 (44–76)	Median (IQR) = 56 (42–67.5)	Median (IQR) = 56 (42–67.5)	Mean (s.d.) = 63.2 (15.7)	Median (IQR) = 57 (47–65)
Female (%)	37.1	46	56	NR	38.2	47.3	47.3	37.5	48
Acute COVID-19 features									
Oxygen therapy requirement (%)	53.8	78			75.4				75
Non-invasive ventilation (%)	14.7	30							6
Invasive ventilation (%)	4.9	1							1
ICU care (%)	12.6	32	0		16.4	8.7	8.7	20	4
Post-acute COVID-19									
≥1 symptom (%)	87.4		66	32.6	74	50.9			76
≥3 symptoms (%)	55.2								

General sequelae

Fatigue (%)	53.1	64	40		39	34.8		55	63
Joint pain (%)	27.3		16.3		4.5	19.6			9
Muscular pain (%)						19.6			2
Fever (%)	0		0		0.9	0			0.1

Respiratory sequelae

Dyspnea (%)	43.4	40	30	22.9	39	34.4	11.1	41.7	23
Cough (%)	~15			15.4	11.8	21.3	2.1	16.7	

Cardiovascular sequelae

Chest pain (%)	21.7		13.1		12.7			10.8	5
Palpitations (%)			10.9						9

Neuropsychiatric sequelae

Anxiety/depression (%)									23
Sleep disturbances (%)					24			30.8	26
PTSD (%)		31							
Loss of taste/smell (%)	~15		22.7	13.1	11.8	21.4		10.8–13.3	7–11
Headache (%)	~10				1.8	17.8	5.4		2

Gastrointestinal sequelae

Diarrhea (%)					0.9	10.5			~5
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Dermatologic sequelae

Hair loss (%)								20	22
Skin rash (%)									3

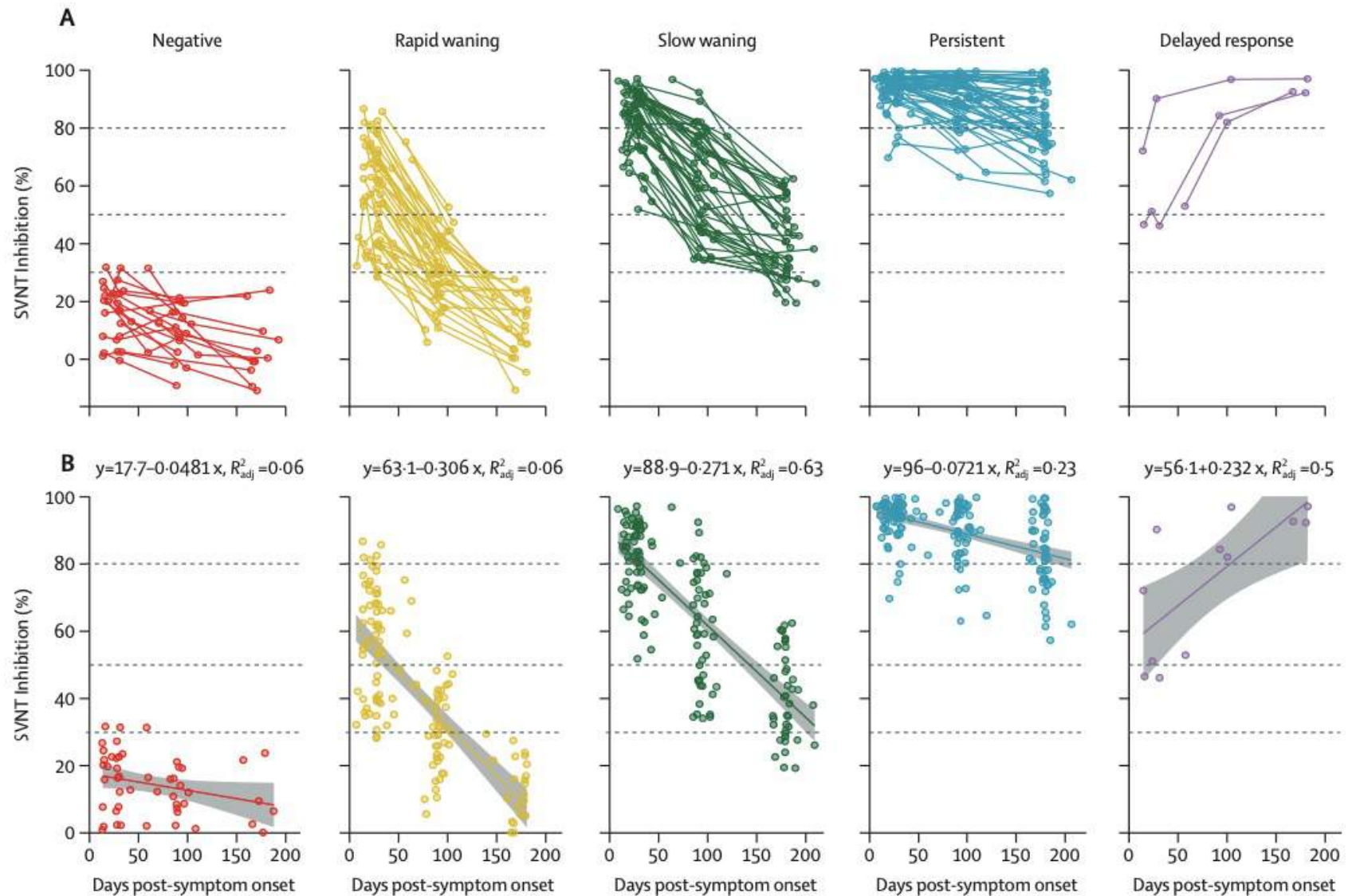
Quality of life

Scale	EuroQol visual analog scale	EQ-5D-5L			SF-36	EuroQol visual analog scale		EQ-5D-5L	EuroQol visual analog scale
Decline (percentage of patients reporting or yes/no)	44.1	Yes			Yes	Yes		Yes	Yes

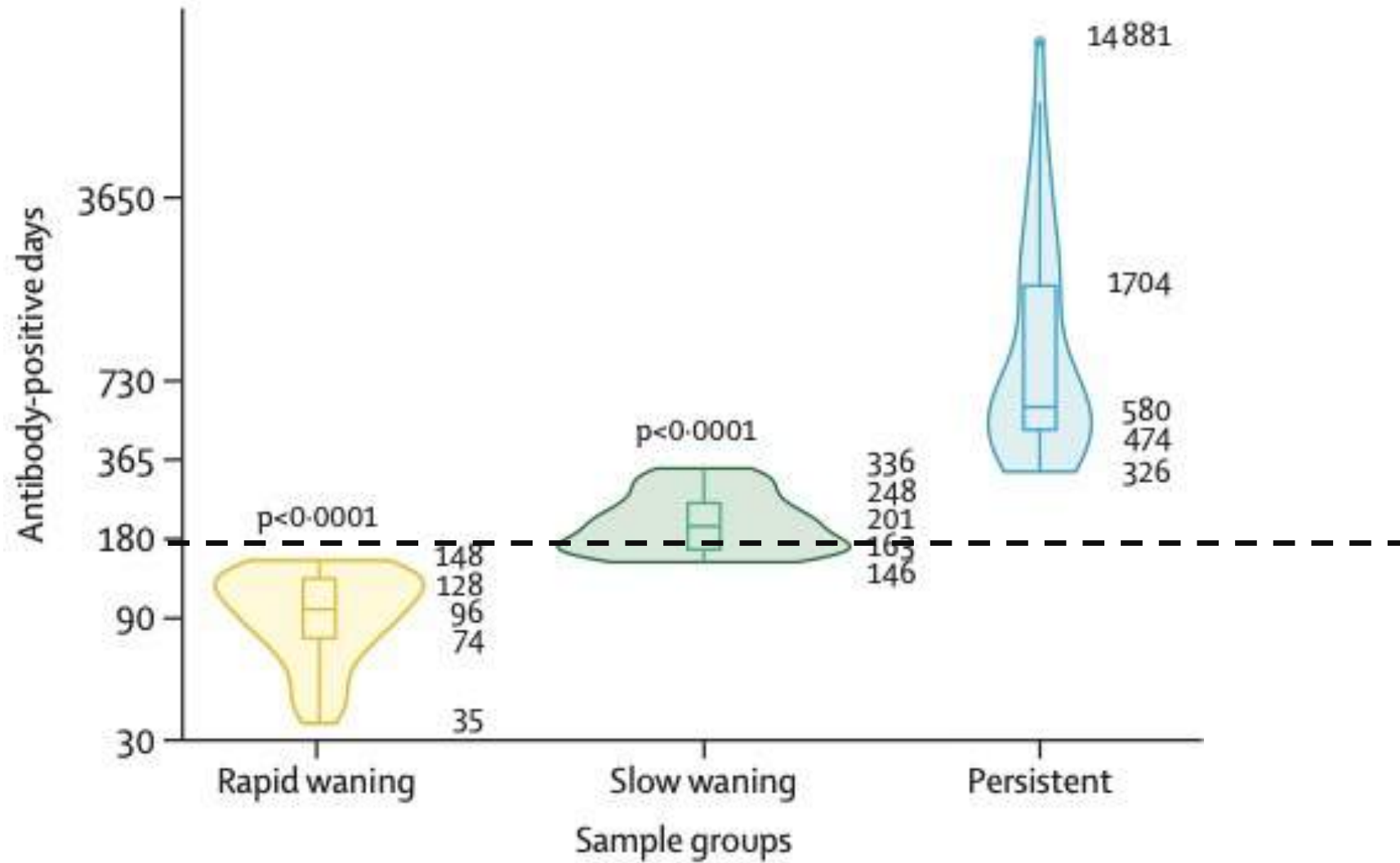
Heterogeneity imunitní odpovědi po COVID

Dynamics of SARS-CoV-2 neutralising antibody responses and duration of immunity: a longitudinal study

Wan Ni Chia*, Feng Zhu*, Sean Wei Xiang Ong, Barnaby Edward Young, Siew-Wai Fong, Nina Le Bert, Chee Wah Tan, Charles Tai, Jinyan Zhang, Seow Yen Tan, Surinder Padda, Yi-Hao Chen, Christine Y L Tham, Kamini Kunasegaran, Mark I-C Chen, Jenny G H Low, Yee-Sin Leo, Laurent Renia, Antonio Bertoletti, Lisa F P Ng, David Chien Lye, Lin-Fa Wang



A Longevity prediction across sample groups





ORIGINAL ARTICLE
COVID-19

Chest radiography is a poor predictor of respiratory symptoms and functional impairment in survivors of severe COVID-19 pneumonia

Rebecca F. D'Cruz¹, Michael D. Waller^{1,2}, Felicity Perrin², Jimstan Periselneris², Sam Norton³, Laura-Jane Smith², Tanya Patrick², David Walder², Amadea Heitmann², Kai Lee², Rajiv Madula², William McNulty², Patricia Macedo², Rebecca Lyall², Geoffrey Warwick², James B. Galloway³, Surinder S. Birring^{1,2}, Amit Patel², Irem Patel^{1,2} and Caroline J. Jolley^{1,2}

At 2-month follow-up, survivors of severe #COVID19 pneumonia experience persistent symptoms, functional disability and mental health problems despite radiographic resolution occurring in the majority, highlighting the need for holistic follow-up care <https://bit.ly/3dz8dXb>

119 pts (vice muži)

RTG norma = CT patologie (v 75 %)

68 % únava

57 % spánek

44 % dušnost a 35 % desaturace při STST



6M



Lancet 2021; 397: 220–32

Published Online

January 8, 2021

<https://doi.org/10.1016/>

6-month consequences of COVID-19 in patients discharged from hospital: a cohort study

Chaolin Huang*, Lixue Huang*, Yeming Wang*, Xia Li*, Lili Ren*, Xiaoying Gu*, Liang Kang*, Li Guo*, Min Liu*, Xing Zhou, Jianfeng Luo, Zhenghui Huang, Shengjin Tu, Yue Zhao, Li Chen, Decui Xu, Yanping Li, Caihong Li, Lu Peng, Yong Li, Wuxiang Xie, Dan Cui, Lianhan Shang, Guohui Fan, Jiuyang Xu, Geng Wang, Ying Wang, Jingchuan Zhong, Chen Wang, Jianwei Wang†, Dingyu Zhang†, Bin Cao†

Summary

Background The long-term health consequences of COVID-19 remain largely unclear. The aim of this study was to describe the long-term health consequences of patients with COVID-19 who have been discharged from hospital and investigate the associated risk factors, in particular disease severity.

1.733 pts

76 % pts symptomy po 6 M

únava, svalová slabost, poruchy spánku po 6M (více ženy)

23 % anxieta a/nebo deprese po 6M

více porušené plicní funkce (Tlco, desaturace O₂) u těžkých pts

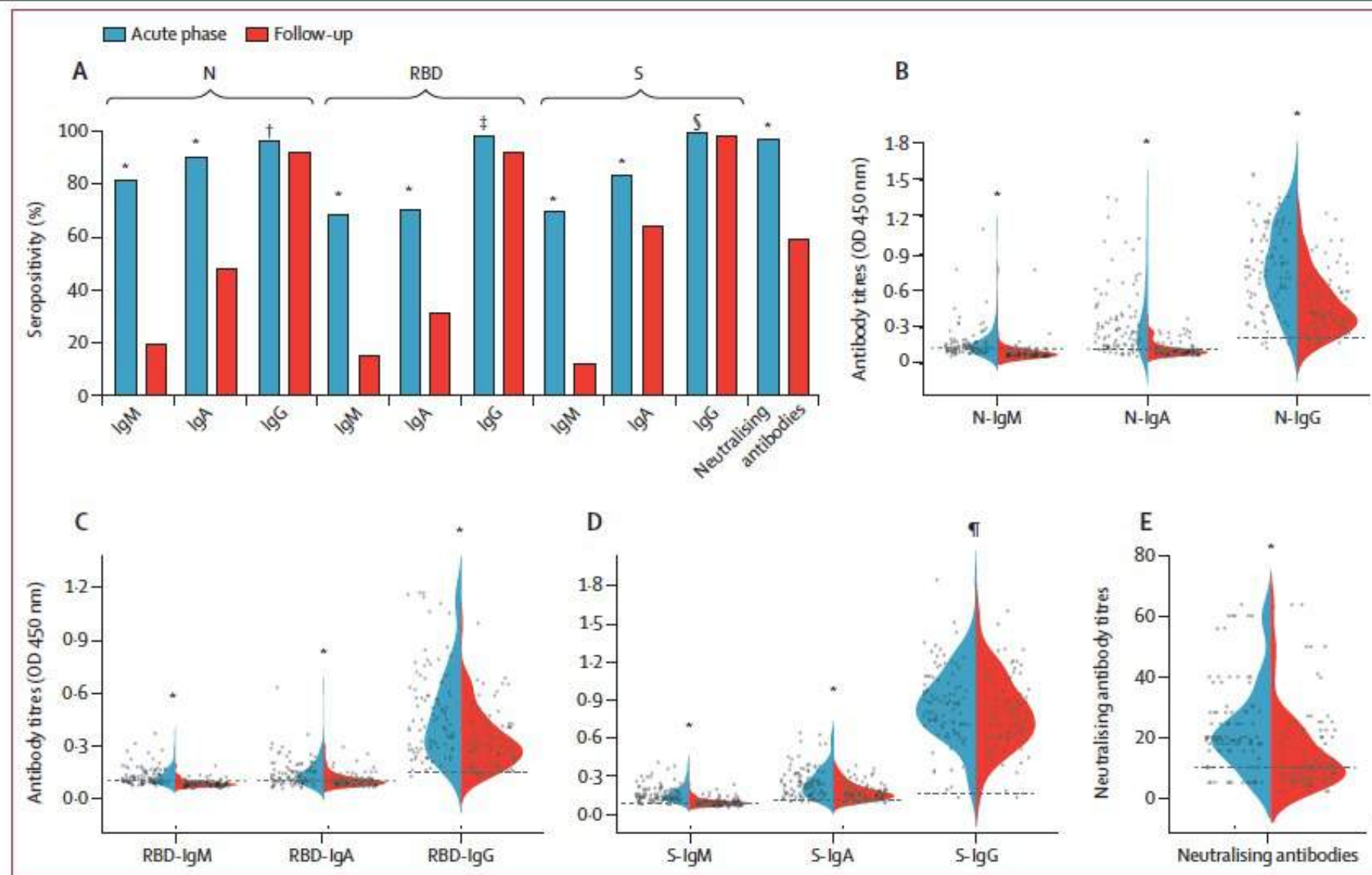


Figure 3: Temporal changes of seropositivity and antibody titres against SARS-CoV-2

(A) Seropositivity of each antibody indicated by the y-axis. Violin plots show the distribution of each antibody feature N (B), RBD (C), S (D), and neutralising antibodies (E) split across baseline and follow-up plasma samples of 94 individuals. The horizontal lines are used to indicate the value used to diagnose positivity from the antibody test. The comparison of antibody test results at acute phase and follow-up was done with paired t tests for antibody titres and McNemar test for antibody positive rates. Plasma samples at acute phase were collected during hospital stay with a median duration of 23 (IQR 20–26) days from illness onset. OD=optical density. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. p values indicate a comparison between acute phase and follow-up. *p<0.0001. †p=0.29. ‡p=0.039. §p=1.00. ¶p=0.021.

3M

H + EMERGENCY



Epidemiology and Infection

cambridge.org/hyg

Original Paper

*SV and SVB contributed equally to this paper

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Surviving COVID-19 in Bergamo province: a
post-acute outpatient re-evaluation.
Epidemiology and Infection **149**, e32, 1–9.
<https://doi.org/10.1017/S0950268821000145>

Received: 12 October 2020

Surviving COVID-19 in Bergamo province: a post-acute outpatient re-evaluation

Serena Venturelli^{1,*} , Simone Vasilij Benatti^{1,*}, Monica Casati¹,
Francesca Binda¹, Gianluca Zuglian^{1,2}, Gianluca Imeri¹, Caterina Conti¹,
Ave Maria Biffi¹, Maria Simonetta Spada¹, Emi Bondi¹, Giorgia Camera¹,
Roberta Severgnini¹, Andrea Giammarresi¹, Claudia Marinaro¹,
Alessandro Rossini¹ , Pietro Andrea Bonaffini¹, Giovanni Guerra¹,
Antonio Bellasi¹, Simonetta Cesa¹ and Marco Rizzi¹

¹ASST Papa Giovanni XXIII Hospital, Bergamo, Italy and ²Fondazione IRCSS Ca' Granda Ospedale Maggiore
Policlinico, Milan, Italy

767 pts

51 % symptom (únava/dušnost při námaze)

30 % post-traumatická stresová porucha

19 % redukce TLco

17% zvýšení D-dimerů

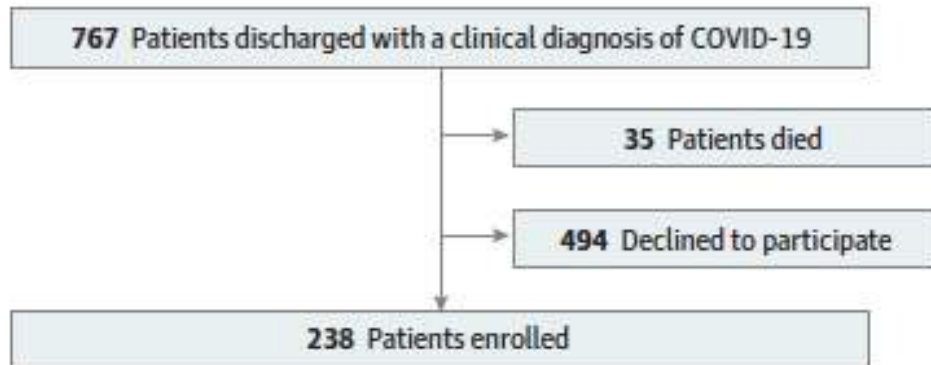




Original Investigation | Infectious Diseases

Respiratory and Psychophysical Sequelae Among Patients With COVID-19 Four Months After Hospital Discharge

Mattia Bellan, MD, PhD; Daniele Soddu, MD; Piero Emilio Balbo, MD; Alessio Baricich, MD, PhD; Patrizia Zeppegno, MD; Gian Carlo Avanzi, MD; Giulia Baldon, MD; Giuseppe Bartolomei, MD; Marco Battaglia, MD; Sofia Battistini, MD; Valeria Binda, MD; Margherita Borg, MD; Vincenzo Cantaluppi, MD; Luigi Mario Castello, MD; Elisa Clivati, MD; Carlo Cisari, MD; Martina Costanzo, MD; Alessandro Croce, MD; Daria Cuneo, MD; Carla De Benedittis, MD; Simona De Vecchi, MD; Alessandro Feggi, MD; Martina Gai, MD; Eleonora Gambaro, MD; Eleonora Gattoni, MD; Carla Gramaglia, MD, PhD; Leonardo Grisafi, MD; Chiara Guerriero, MD; Eyal Hayden, MD; Amalia Jona, MD; Marco Invernizzi, MD, PhD; Luca Lorenzini, MD; Lucia Loreti, MD; Maria Martelli, MD; Paolo Marzullo, MD, PhD; Erica Matino, MD; Antonio Panero, MD; Elena Parachini, MD; Filippo Patrucco, MD; Giuseppe Patti, MD; Alice Pirovano, MD; Pierluigi Prosperini, MD; Riccardo Quaglino; Cristina Rigamonti, MD, PhD; Pier Paolo Sainaghi, MD, PhD; Camilla Vecchi, MD; Erika Zecca, MD; Mario Pirisi, MD



238 pts

52 % redukcce TLco (ženy, CKD, COPD, ICU)

22 % redukcce mobility

Persistent Post-COVID-19 Inflammatory Interstitial Lung Disease: An Observational Study of Corticosteroid Treatment

Katherine Jane Myall (MRCP)¹, Bhashkar Mukherjee (PhD)¹, Ana Margarida Castanheira (MSc)¹
Jodie L. Lam (BSc (Hons))¹, Giulia Benedetti (MD)², Sze Mun Mak (FRCR)², Rebecca Preston
(FRCR)², Muhunthan Thillai (PhD)³, Amy Dewar (MRCP)¹, Philip L Molyneaux (PhD)^{4&5} and Alex
G. West (MRCP)¹



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2. Department of Radiology, Guy's and St Thomas' NHS Foundation Trust, Great Maze Pond, London SE1 9RT
3. Department of Interstitial Lung Disease, Royal Papworth Hospital NHS Foundation Trust, Cambridge UK
4. National Heart and Lung Institute, Imperial College London, UK
5. Royal Brompton Hospital, UK.



Results: At four weeks post-discharge, 39% of patients reported ongoing symptoms (325/837) and were assessed. Interstitial lung disease, predominantly organising pneumonia, with significant functional deficit was observed in 35/837 survivors (4.8%). Thirty of these patients received steroid treatment, resulting in a mean relative increase in transfer factor following treatment of 31.6% (standard deviation $\pm$ 27.6, $p < 0.001$), and FVC of 9.6% (standard deviation $\pm$ 13.0, $p = 0.014$), with significant symptomatic and radiological improvement.

6M



JAMA
Network | **Open**

30 % pts má obtíže po 6-9M

Únava dominuje

Jasně více u pacientů v těžkém stavu

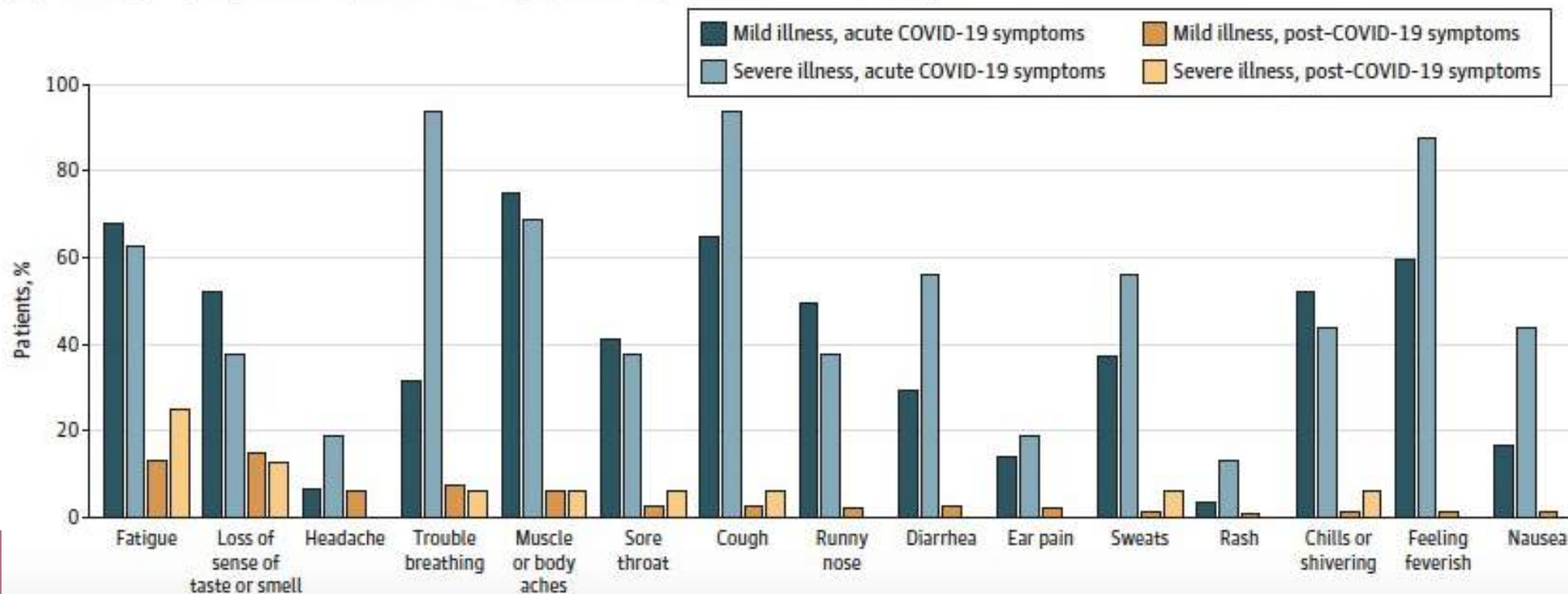


Research Letter | Infectious Diseases

Sequelae in Adults at 6 Months After COVID-19 Infection

Jennifer K. Logue, BS; Nicholas M. Franko, BS; Denise J. McCulloch, MD, MPH; Dylan McDonald, BA; Ariana Magedson, BS; Caitlin R. Wolf, BS; Helen Y. Chu, MD, MPH

B Percentage of participants who reported COVID-19 symptoms during acute illness and at follow-up



Česká data

Skala et al. *Virology Journal* (2021) 18:73
<https://doi.org/10.1186/s12985-021-01546-8>

Virology Journal

SHORT REPORT

Open Access

Heterogeneity of post-COVID impairment: interim analysis of a prospective study from Czechia

Mikuláš Skala^{1,2}, Michal Svoboda³, Michal Kopecký^{1,2}, Eva Kocová^{2,4}, Martin Hyršl⁴, Michal Homoláč⁵, Viktor Chrobok^{2,5}, Pavel Bostík^{2,6,7}, Miroslav Fajfr⁶, Petr Prasil^{2,8}, Stanislav Plísek^{2,8}, Radek Sleha⁷ and Vladimír Koblízek^{1,2*}



3M

Table 1 Extra-pulmonary symptoms three months after COVID (N = 102)

Extra-pulmonary symptoms	n (%)
Fatigue	22 (21.6%)
Loss of smell	21 (20.6%)
Loss of taste	7 (6.9%)
Cephalaea	6 (5.9%)
Memory impairment	5 (4.9%)
Arthragia/myalgia	4 (3.9%)
Conjunctivitis	2 (2.0%)
Dyspepsia	2 (2.0%)
Subfebrile	1 (1.0%)
Others	14 (13.7%)
At least one non-pulmonary symptom	47 (46.1%)

Table provides an overview of all extra-pulmonary symptoms of patients three months after the diagnosis of COVID-19. Some patients reported more than one symptom

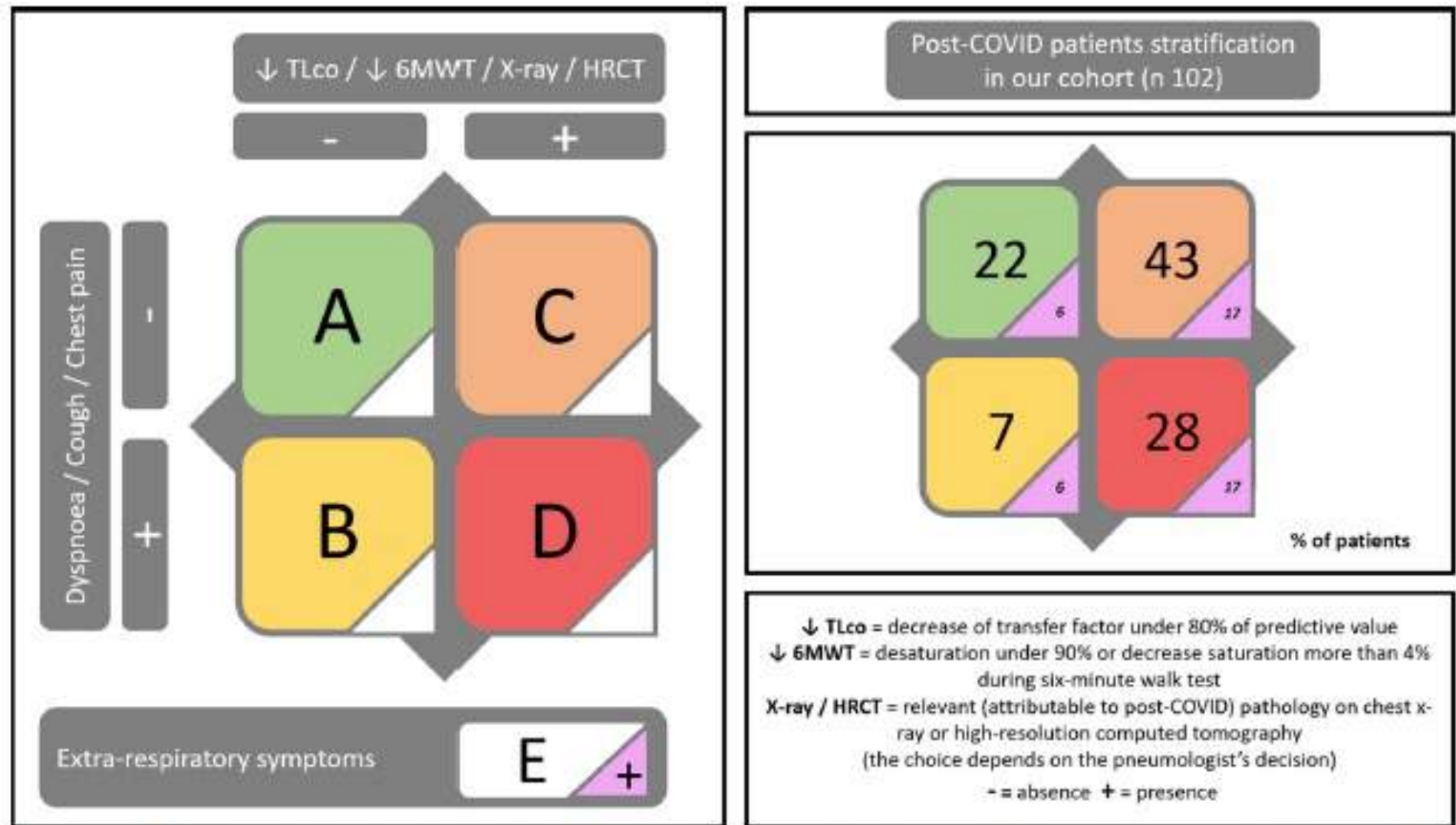
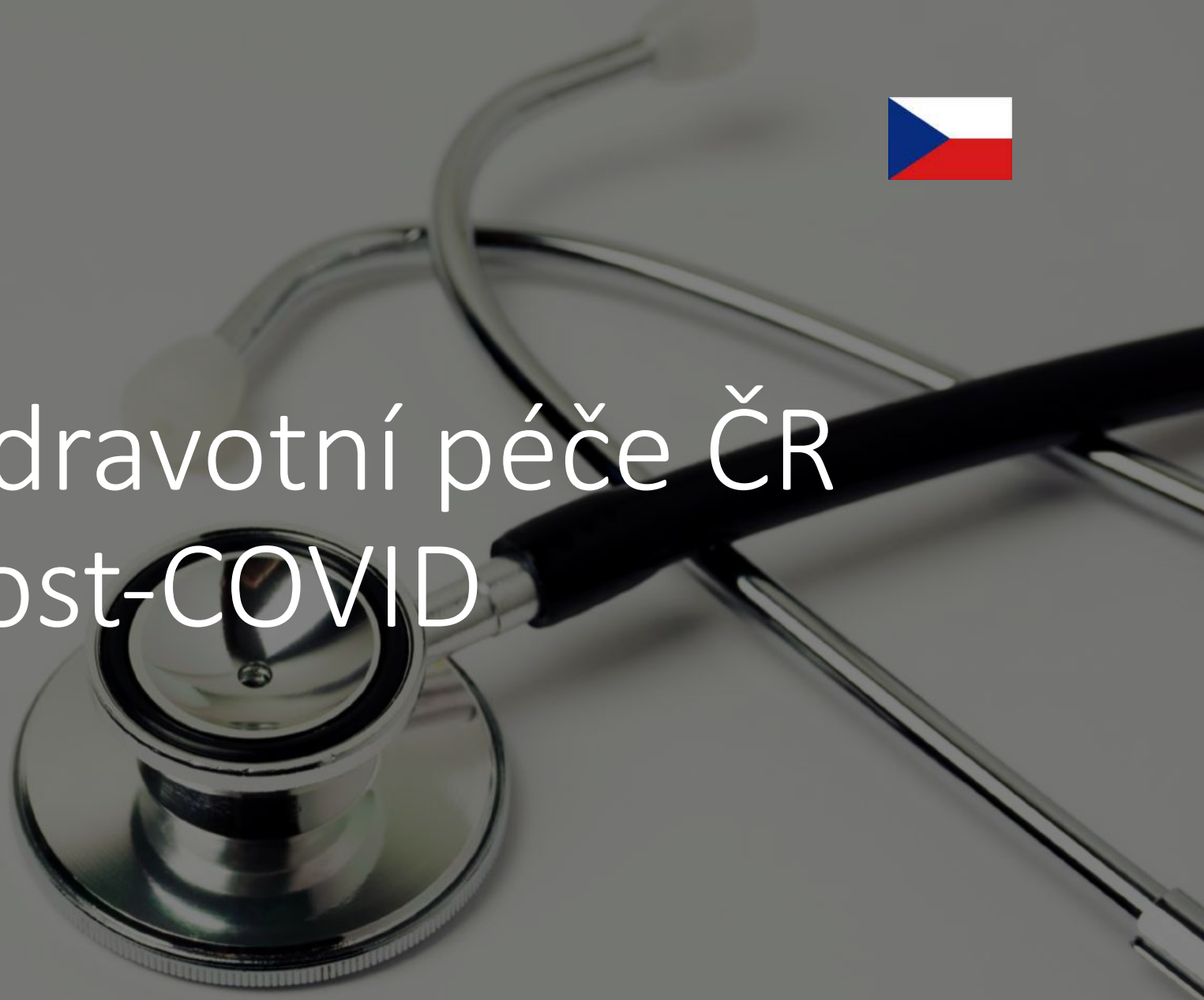
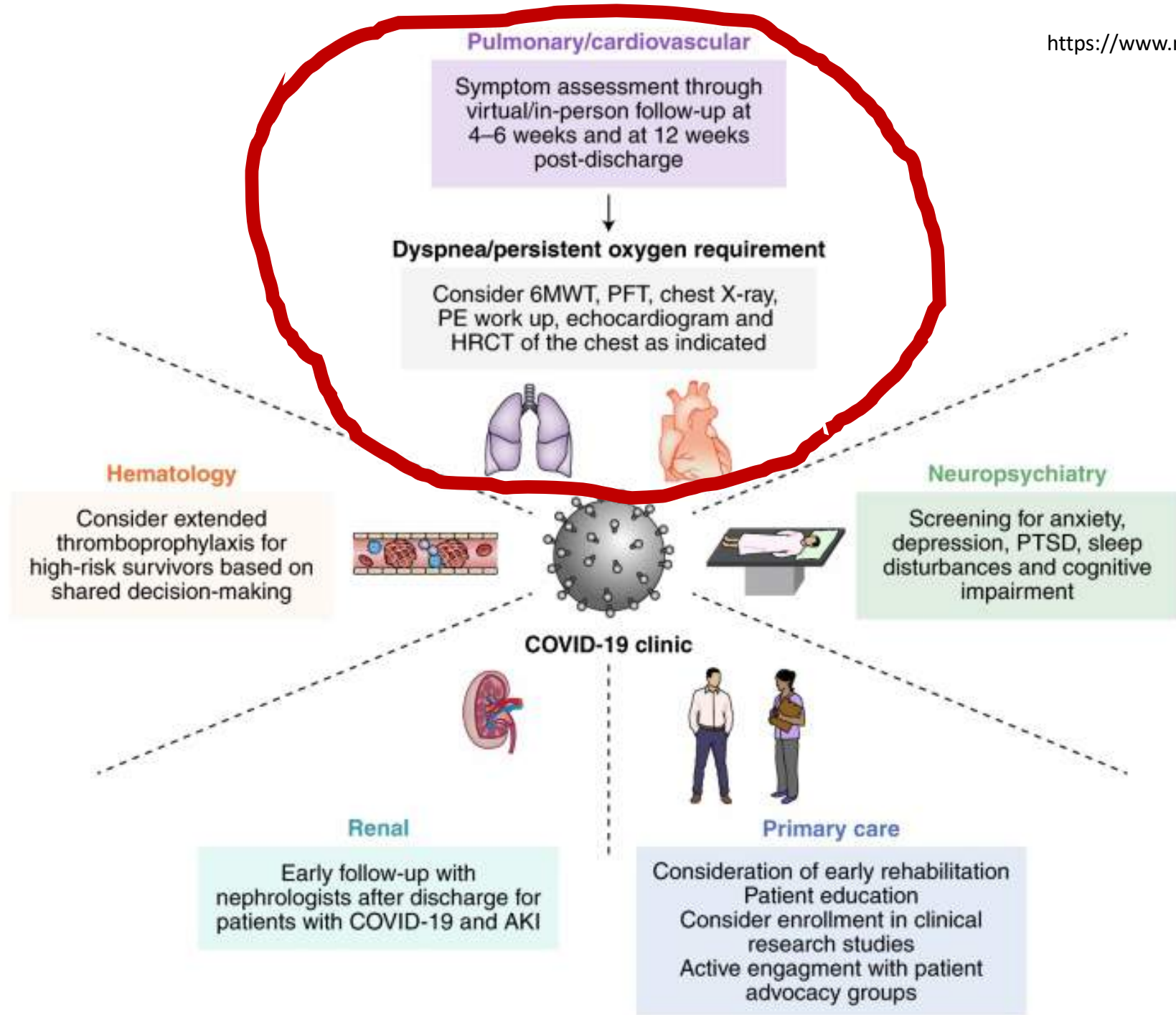


Fig. 1 Left side: post-COVID stratification groups. (A) No respiratory symptoms, no objective signs of pulmonary involvement (PI), (B) respiratory symptoms without objective signs of PI, (C) no respiratory symptoms but objective signs of PI, (D) respiratory symptoms and objective signs of PI, (E) extra-pulmonary symptoms (additional mark to group A–D). Example of use—a patient with persistent cough and fatigue without objective signs of PI is classified as B/E. Right side: results of applied use of post-COVID stratification on our study patient cohort



System zdravotní péče ČR post-COVID





VYHLÁŠKA

ze dne 27. dubna 2021,

kterou se mění vyhláška č. 39/2012 Sb., o dispenzární péči, ve znění vyhlášky č. 318/2016 Sb.

Ministerstvo zdravotnictví stanoví podle § 120 zákona č. 372/2011 Sb., o zdravotních službách a podmínkách jejich poskytování (zákon o zdravotních službách), ve znění zákona č. 111/2019 Sb., k provedení § 5 odst. 3 písm. b) zákona o zdravotních službách:

Čl. I

V příloze vyhlášky č. 39/2012 Sb., o dispenzární péči, ve znění vyhlášky č. 318/2016 Sb., se na konci položky „Poskytovatel v oboru pneumologie a ftizeologie“ doplňuje řádek 03, který zní:

„03	Osoby po prodělaném nebo suspektně prodělaném onemocnění COVID-19 se závažnými přetrvávajícími následky trvajícími více než 12 týdnů“.
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Údaje pacienta

Výška (cm, pro výpočet BMI)

177

Váha (kg, pro výpočet BMI)

95

BMI

30,32

Kuřák ⁱ

Nekuřák

Symptomy

Dušnost ⁱ

☐

Kašel ⁱ

☒

Expektorace ⁱ

☒

Bolest na hrudi ⁱ

☒

Nespecifický hrudní dyskomfort ⁱ

☐

Únava ⁱ

☒

Jiné symptomy ⁱ

nevolnost, padání vlasů

Funkční

Ventilační porucha ⁱ

Obstrukční ventilační porucha

Porucha difuze ⁱ

☒

Desaturace v klidu ⁱ

☐

Desaturace při námaze ⁱ

☒

Zobrazovací vyšetření

RTG ⁱ

Normální

CT ⁱ

Normální

Známky postižení jiných systémů ⁱ

Kardiovaskulární

☐

Neurologické

☐

Nefrologické

☐

Kožní

☐

Hematologické

☐

Revmatologické

☐

Gastroenterologické

☐

Imunologické

☐

Psychiatrické

☒

Otorinolaryngologické

☐

Jiná postižení

Závěr

Stratifikace ⁱ

D(E)

Datum kontroly

6. 2. 2021

Typ kontroly

3M

Stav sledování

Neukončeno

ISINP
ÚZIS ČR

System zdravotní péče o post-COVID v Česku

vždy

- Praktický lékař (>5.000 ambulancí/ČR)
- **vyloučení jiných onemocnění**

někdy

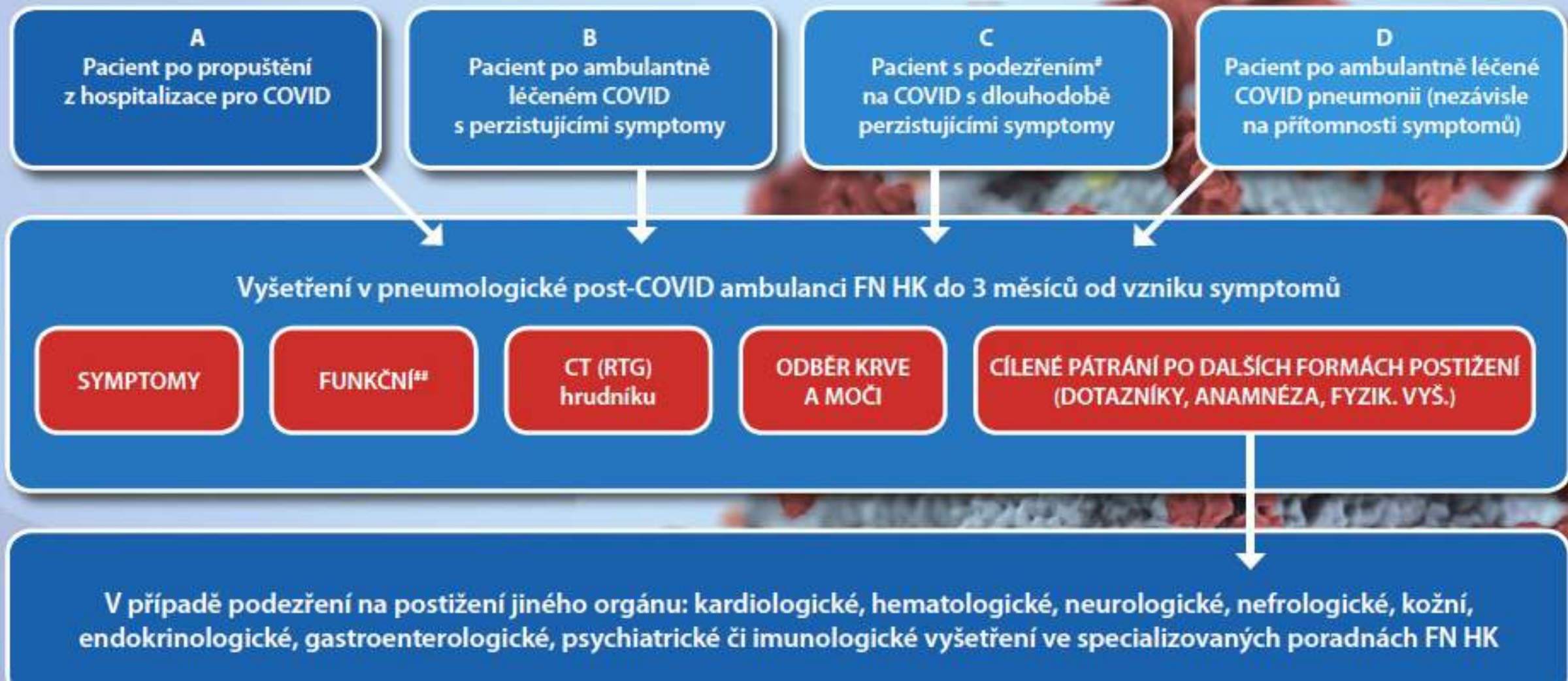
- Pneumolog (400 ambulancí vč.nemocničních/ČR)
- **posouzení rozsahu postižení, dispenzarizace, léčba post-COVID**

vyjíměčně

- Mezioborové centrum (přibližně 10-14/ČR)
- **diferencální diagnostika komplikovaných případů post-COVID**

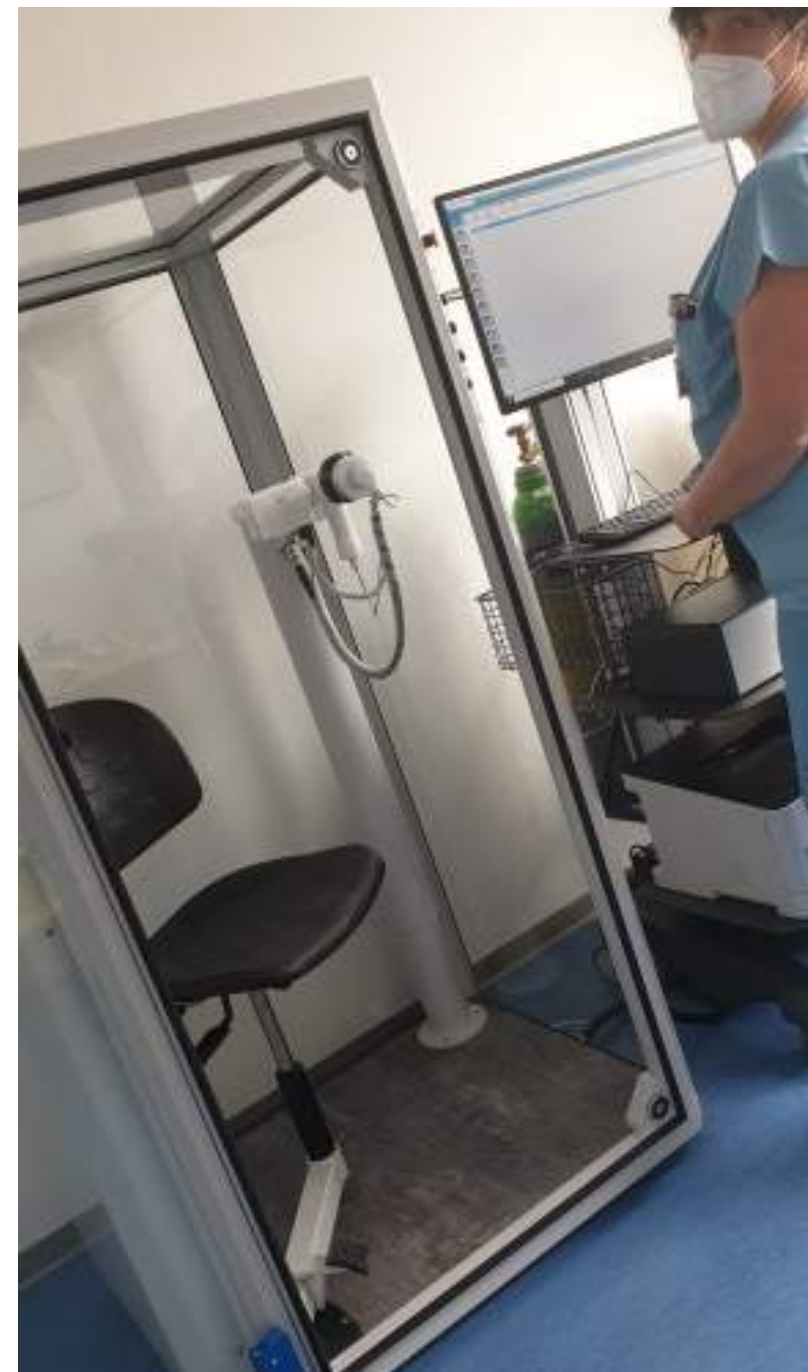
Post-COVID sledování ve FN HK

(rozšířený program péče pro ambulantní pacienty)





FN HK od 1.3. 2020 do 30.6.2021
650 post-COVID pacientů a
2.500 hospitalizovaných s COVID



(rozšířený program péče pro ambulantní pacienty)



Při nálezu plicního (či jiného) post-COVIDového postižení = DLOUHODOBÁ PÉČE VE FN HK

Vstupní vyšetření
do 3M od vzniku
COVID

6M
od vzniku
COVID

12M
od vzniku
COVID

18M
od vzniku
COVID

24M
od vzniku
COVID

30M
od vzniku
COVID

36M
od vzniku
COVID

Při vymizení symptomů + normalizaci funkcí plic + zobrazovacího vyšetření
= UKONČENÍ SLEDOVÁNÍ A PŘEDÁNÍ DO PÉČE PRAKTICKÉHO LÉKAŘE



ČESKÁ PNEUMOLOGICKÁ
A FTIZEOLOGICKÁ SPOLEČNOST

České lékařské společnosti J. E. Purkyně

INTRANET | ČIS

PŘIHLÁSIT SE

[Registrace](#)

HOME O SPOLEČNOSTI NOVINKY KALENDÁŘ PRO ODBORNÍKY ODBORNÉ SEKCE **PRO VEŘEJNOST** PARTNEŘI KONTAKT ENGLISH

Vyhledat



O OBORU

DŮLEŽITÉ INFORMACE

AKCE PRO VEŘEJNOST

PUBLIKACE PRO PACIENTY

ODKAZY

NAJDĚTE SI SVÉHO
PNEUMOLOGA

NAJDĚTE SI SPÁNKOVOU
LABORATOŘ

INHALAČNÍ TECHNIKY PRO
PACIENTY - CZ, EN

NAJDĚTE SI SVÉHO PNEUMOLOGA



Kam se mám obrátit?

Hlavní město Praha

Středočeský

Jihočeský

Plzeňský

► **Karlovarský**

Ústecký

Liberecký

Královéhradecký

Pardubický

Vysočina

Jihomoravský

Olomoucký

Zlínský

Moravskoslezský