

**Congresso CoSiPS 2022
Roma, 17-18 giugno 2022
Casa la Salle – Via Aurelia 472 Roma**

**VERSO UN NUOVO SSN.
LA SANITA' DOPO LA PANDEMIA.
NUOVE SFIDE E NUOVI APPROCCI PER INNOVAZIONE, QUALITA' E SICUREZZA**

LONG COVID NELL' ADULTO

Dott. Claudio Santini - Roma

Dimensioni della pandemia

- **Casi di COVID confermati: 537 milioni**
- **Decessi: 6,3 milioni**

Sintomi della fase acuta

- *Sintomi respiratori:*
 - tosse, espettorato, dispnea
- *Sintomi muscolo-scheletrici:*
 - mialgie, artralgie, cefalea, astenia
- *Sintomi gastro-enterici:*
 - dolori addominali, vomito, diarrea

Acute COVID: six clusters of symptoms

- “Flu-like” with no fever—headache, loss of smell, muscle pains, cough, sore throat, chest pain, no fever
- “Flu-like” with fever—headache, loss of smell, cough, sore throat, hoarseness, fever, loss of appetite
- Gastrointestinal—headache, loss of smell, loss of appetite, diarrhea, sore throat, chest pain, no cough
- Severe level one, fatigue—headache, loss of smell, cough, fever, hoarseness, chest pain, fatigue
- Severe level two, confusion—headache, loss of smell, loss of appetite, cough, fever, hoarseness, sore throat, chest pain, fatigue, confusion, muscle pain
- Severe level three, abdominal and respiratory—headache, loss of smell, loss of appetite, cough, fever, hoarseness, sore throat, chest pain, fatigue, confusion, muscle pain, shortness of breath, diarrhea, abdominal pain

Decorso clinico

- ***Acute COVID***: guarigione in 2-3 settimane (la maggior parte dei pazienti)

Decorso clinico

- ***Acute COVID***: guarigione in 2-3 settimane (la maggior parte dei pazienti)
- ***Ongoing symptomatic COVID-19***: sintomi >4 settimane (1:5 paz.)
- ***Post-COVID-19***: sintomi >12 settimane (1:10 paz.)

Decorso clinico

- ***Acute COVID***: guarigione in 2-3 settimane (la maggior parte dei pazienti)

Long COVID

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Cerca su Twitter



Accedi

Iscriviti



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The **#LongCovid** **#COVID19** is starting to be addressed on major newspapers in Italy 🇮🇹 too: ~20% of tested patients remain covid + for at least 40 days 🙌. Prof from Tor Vergata University of Rome notes: there is a lot we don't know about this virus.

rep.repubblica.it/pwa/generale/2

8:17 PM · 20 mag 2020 · Twitter for Android

1 Retweet 7 Tweet di citazione 22 Mi piace

Il COVID nei Social e nei Media

Perego E. Twitter 20 May. 2020. <https://twitter.com/elisaperego78/status/1263172084055838721?s=20>.

Edwards E. COVID-19 “long-haulers” report nearly 100 symptoms for more than 100 days. NBC News; 2020 [cited 2020 Jul 31] <https://www.nbcnews.com/health/health-news/covid-19-long-haulers-report-nearly-100-symptoms-more-100-n1235217>.

Terminologia

- **Chronic COVID-19 syndrome**
- **Last sequelae of COVID-19**
- **Long term COVID-19**
- **Post-COVID syndrome**
- **Post-acute COVID-19**
- **Post-acute sequele of COVID (PASC)**

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Post COVID-19 condition

A clinical case definition of post-COVID-19 condition by a Delphi consensus

Joan B Soriano, Srinivas Murthy, John C Marshall, Pryanka Relan, Janet V Diaz, on behalf of the WHO Clinical Case Definition Working Group on Post-COVID-19 Condition

Post-COVID-19 condition occurs in individuals with a history of probable or confirmed SARS-CoV-2 infection, usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis.

Symptoms might be new onset after initial recovery from an acute COVID-19 episode or persist from the initial illness. Symptoms might also fluctuate or relapse over time.

A separate definition might be applicable for children.

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This global definition of post-COVID-19 condition will help to advance both advocacy and research, but will probably change as new evidence emerges and our understanding of the consequences of COVID-19 continues to evolve.

Persistent Symptoms in Patients After Acute COVID-19

A. Carfi, R. Bernabei, F. Landi for the Gemelli against COVID-19 Post-Acute Care Study Group

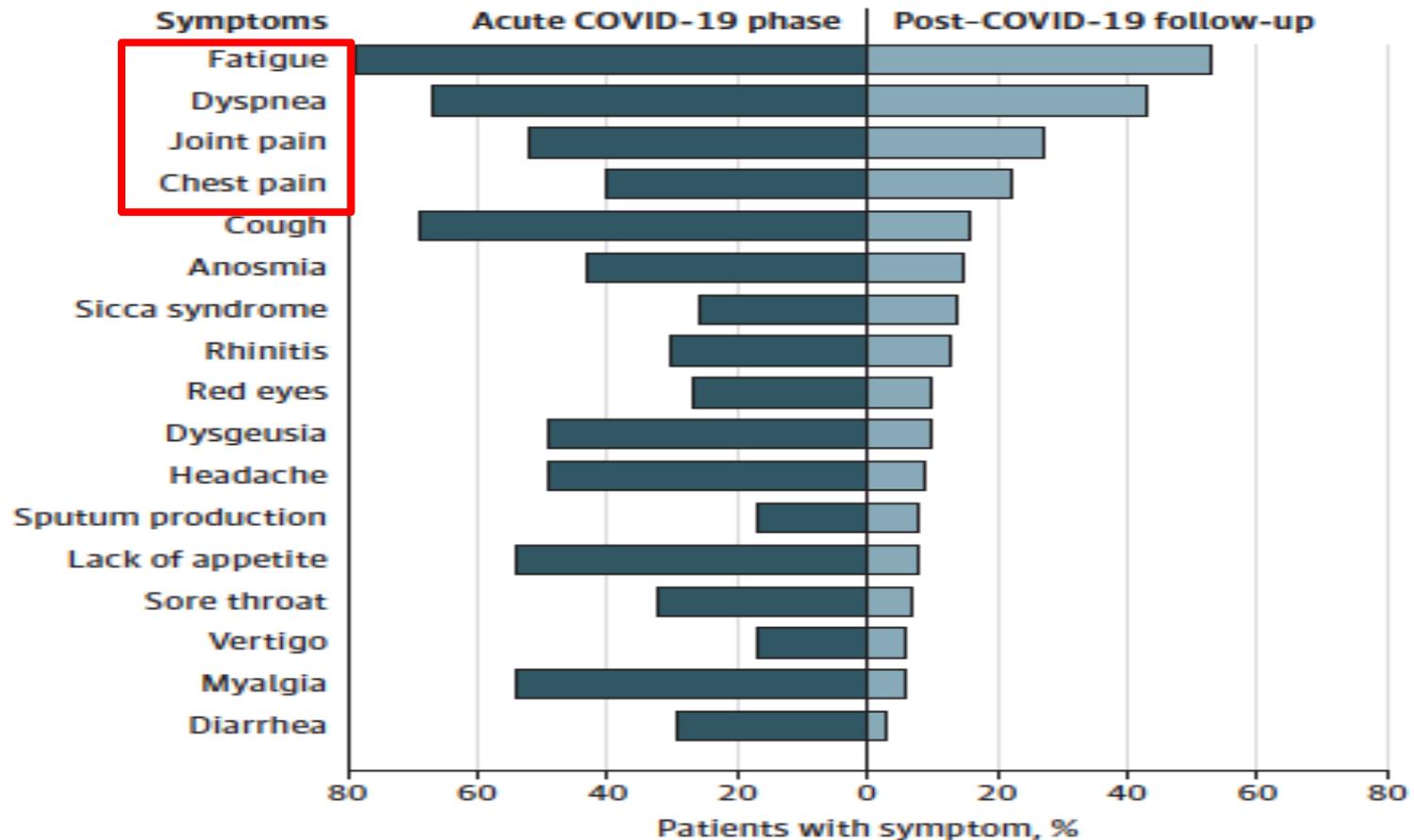
Dopo due mesi dalla dimissione:

- **L'87% dei pazienti lamenta ancora sintomi
(il 32% 1-2 sintomi, il 55% 3 o più sintomi)**
- **Il 44.1% riferisce peggioramento della qualità di vita**

Persistent Symptoms in Patients After Acute COVID-19

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Figure. COVID-19–Related Symptoms



Sintomi più frequenti

- Stanchezza estrema
- Debolezza muscolare
- Febbre di basso grado
- Incapacità di concentrazione (*nebbia cerebrale*)
- Perdita di memoria
- Cambiamenti di umore, a volte accompagnati da depressione e problemi di salute mentale
- Insonnia
- Eemicrania
- Dolori articolari alle braccia e alle gambe
- Diarrea e vomito
- Anosmia e disosmia (ovvero perdita di gusto e odore)
- Mal di gola e difficoltà a deglutire
- Nuova insorgenza di diabete e ipertensione
- Rash cutaneo
- Dispnea
- Dolore al petto
- Geloni
- Orticaria
- Eruzioni papulosquamose

Long-COVID: sindromi cliniche

Post COVID syndrome	Predominant clinical features	Remarks
Post COVID fatigue syndrome	Profound fatigue	Rule out causes like anaemia, hypothyroidism, electrolyte imbalance
Post COVID cardio-respiratory syndrome	Cough, low grade fever, shortness of breath, chest pain,	Sudden increase in dyspnoea can be due to tension pneumothorax, pulmonary embolism, coronary artery disease or heart failure in patients recovered from COVID-19
Post COVID neuro-psychiatric syndrome	Headaches, anosmia, neurocognitive difficulties, insomnia, depression and other mental health conditions	In patients with acute onset neurological symptoms consider vasculitis, thrombosis or demyelination. Post COVID psychological issues have to be addressed properly.
Post COVID gastro-intestinal syndrome	Abdominal discomfort, diarrhea, constipation, vomiting,	GI symptoms can be a sequelae of the disease. Various drugs used during acute COVID, especially lopinavir/ritonavir produces GI symptoms
Post COVID hepato-biliary syndrome	Nausea, jaundice, deranged LFT	Drugs used in the treatment of COVID-19 like remdesivir, favipiravir, lopinavir/ritonavir and tocilizumab can cause hepatic impairment.
Post COVID musculo-skeletal syndrome	Muscle pains and weakness, arthralgia	May be due to disease, prolonged ICU care, neurological problems, myopathy or electrolyte imbalance. Usually subside during follow up. Inflammatory arthralgia has to be differentiated from other causes like RA, SLE
Post COVID thromboembolic syndrome	Depending upon the vascular territory of involvement breathlessness in PE, chest pain in CAD and limb weakness and neurological deficit in CVA	Early diagnosis and treatment is life saving. Follow the standard treatment protocol.
Post COVID multisystem inflammatory syndrome/post COVID autoimmune syndrome	Fever, gastrointestinal symptoms, rash, chest pain, palpitations	Elevated levels of markers of inflammation.
Post COVID genito-urinary symptoms	Proteinuria, haematuria, development of kidney injury	Endothelial dysfunction, coagulopathy, complement activation, direct effect of virus on kidney, sepsis and multi-organ dysfunction contribute to the development
Post COVID dermatological syndrome	Vesicular, maculopapular, urticarial, or chilblain-like lesions on the extremities (COVID toe)	

Fattori di rischio di sintomatologia persistente

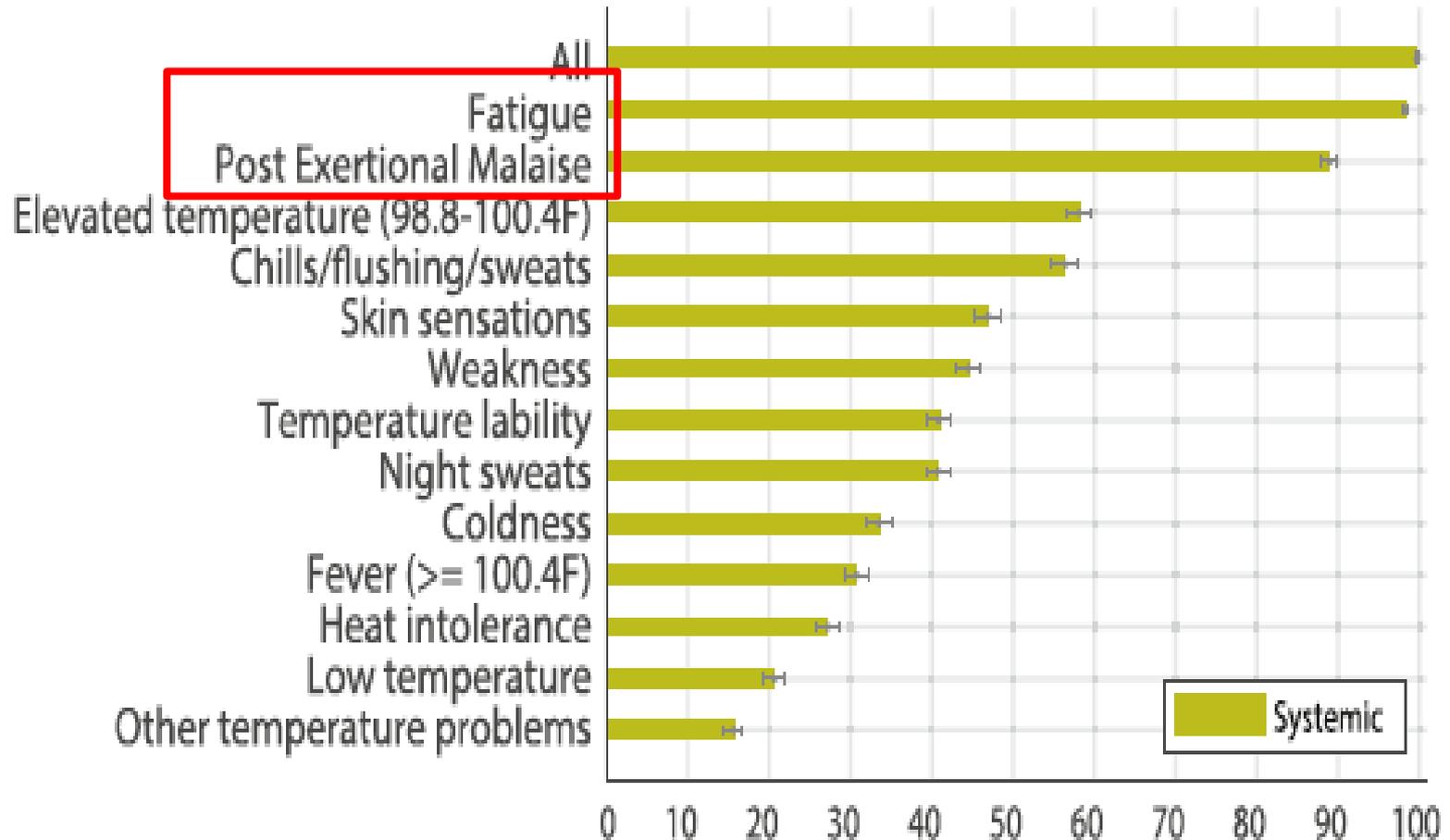
- **Genere femminile**
- **Età maggiore di 50 anni**
- **Presenza di più di 5 sintomi nella prima settimana della fase acuta di malattia**
- **Anamnesi di malattie psichiatriche**

Fattori di rischio di sintomatologia persistente

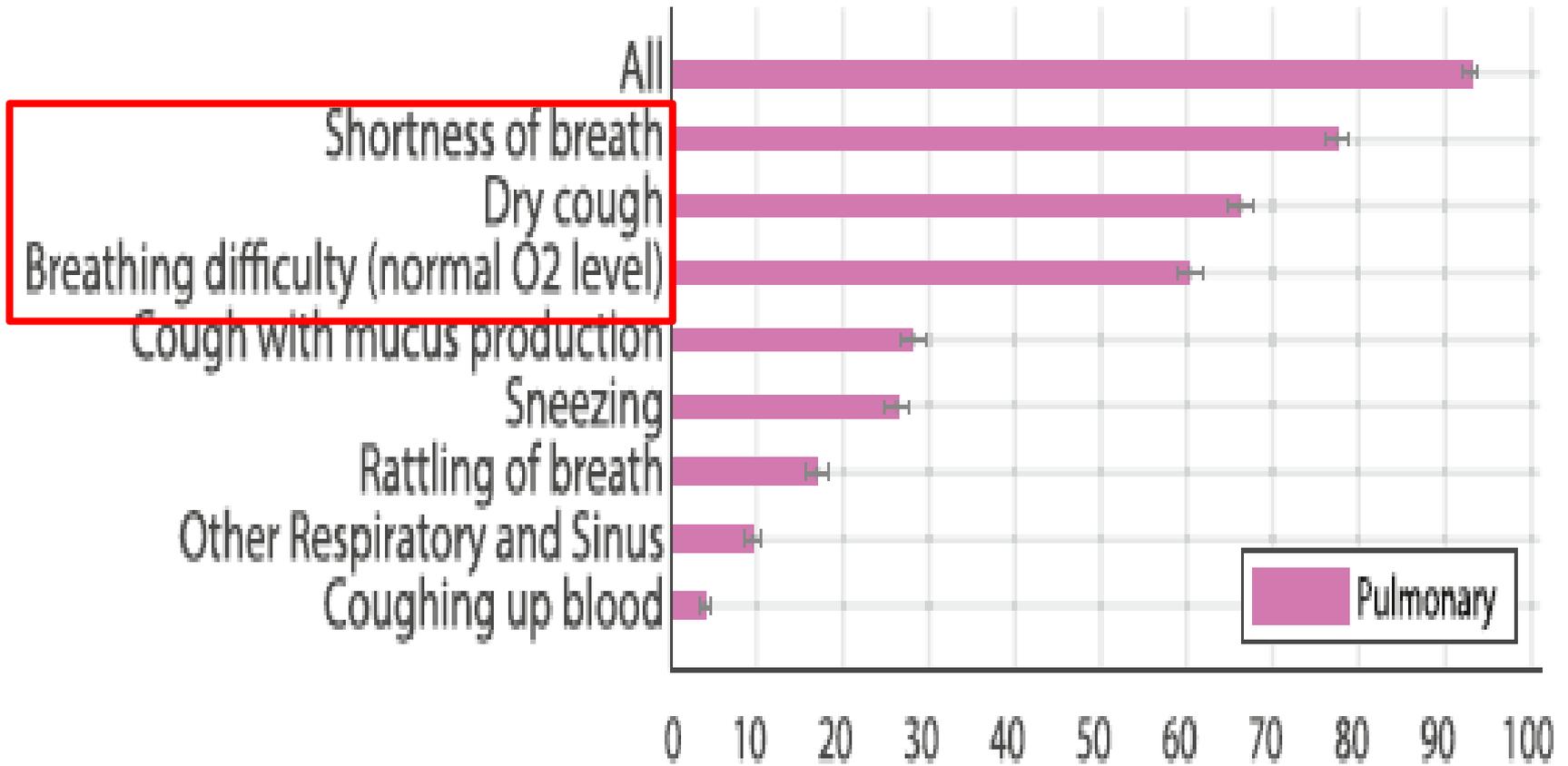
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La gravità della fase acuta non rappresenta un fattore di rischio di persistenza dei sintomi

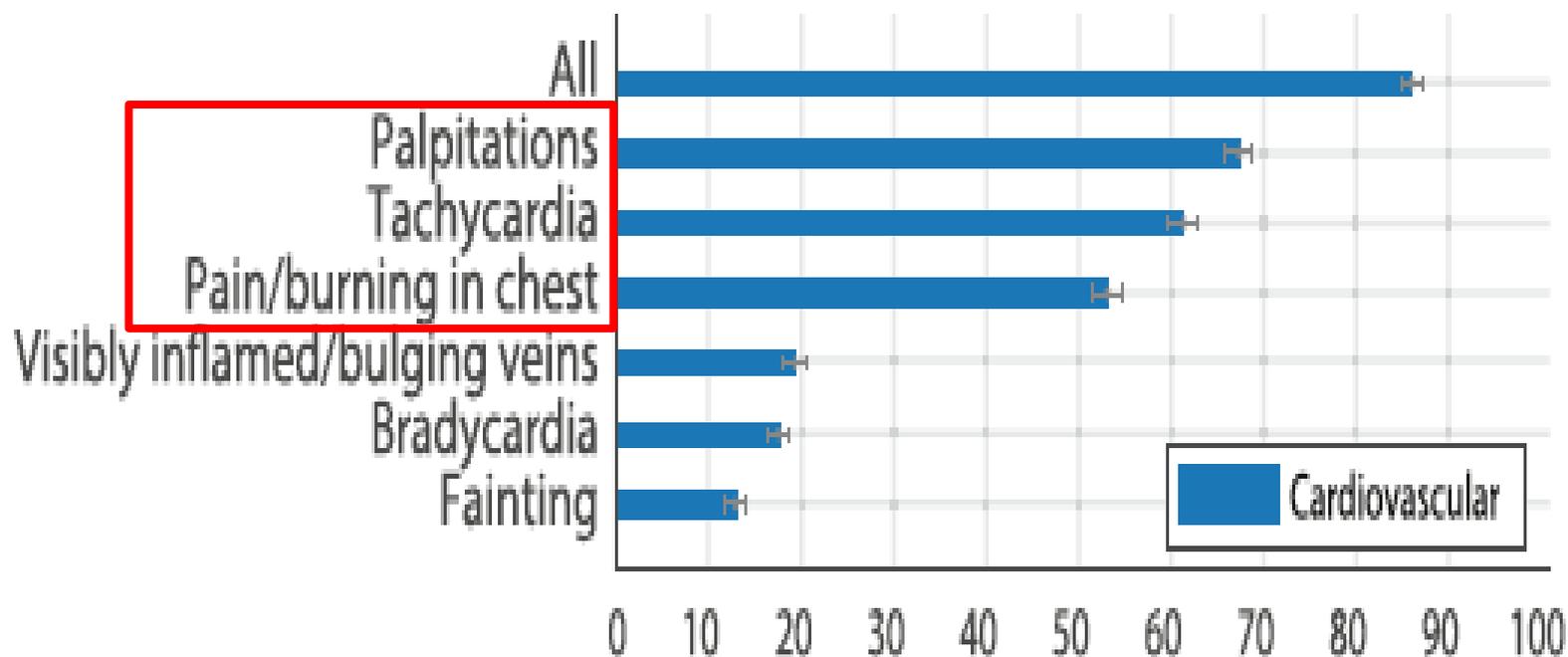
Sintomi sistemici



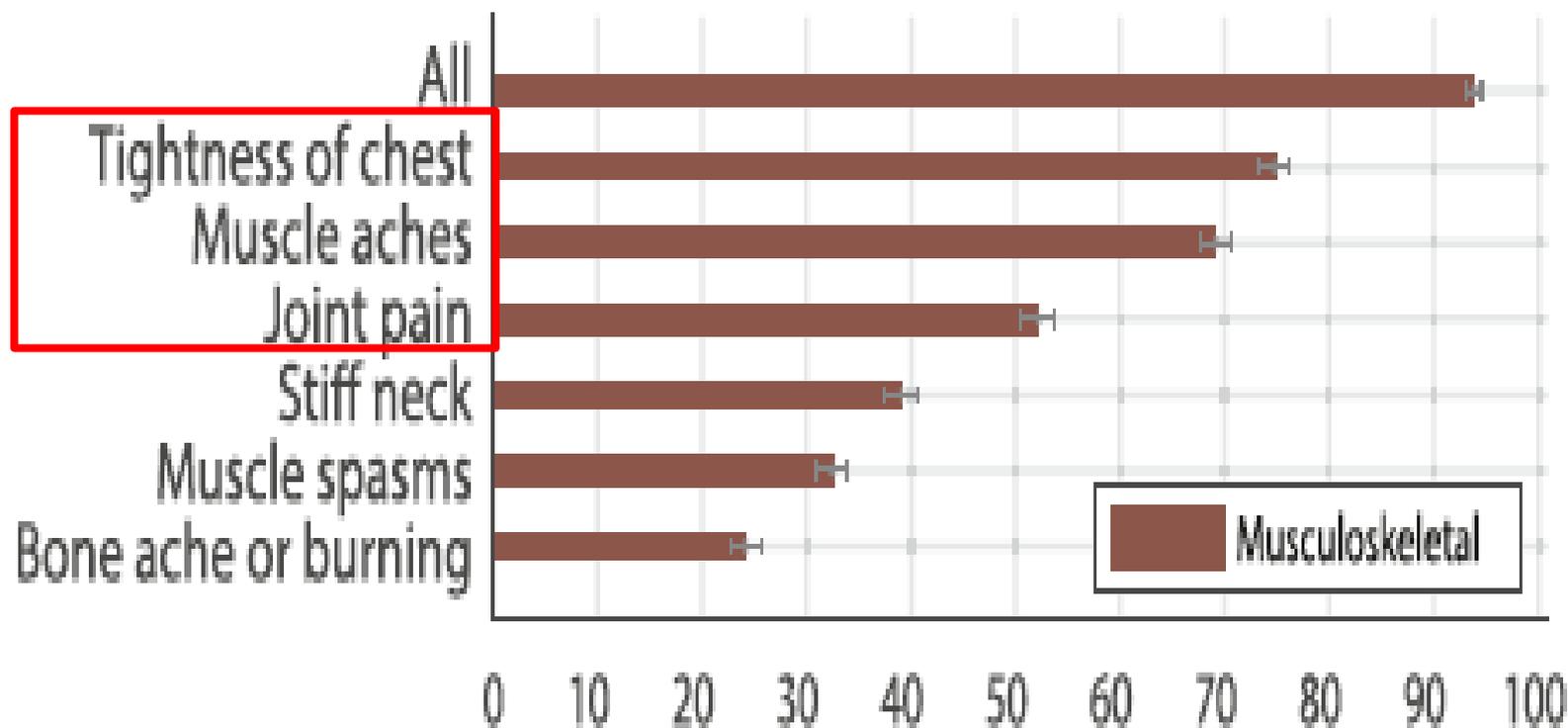
Sintomi respiratori



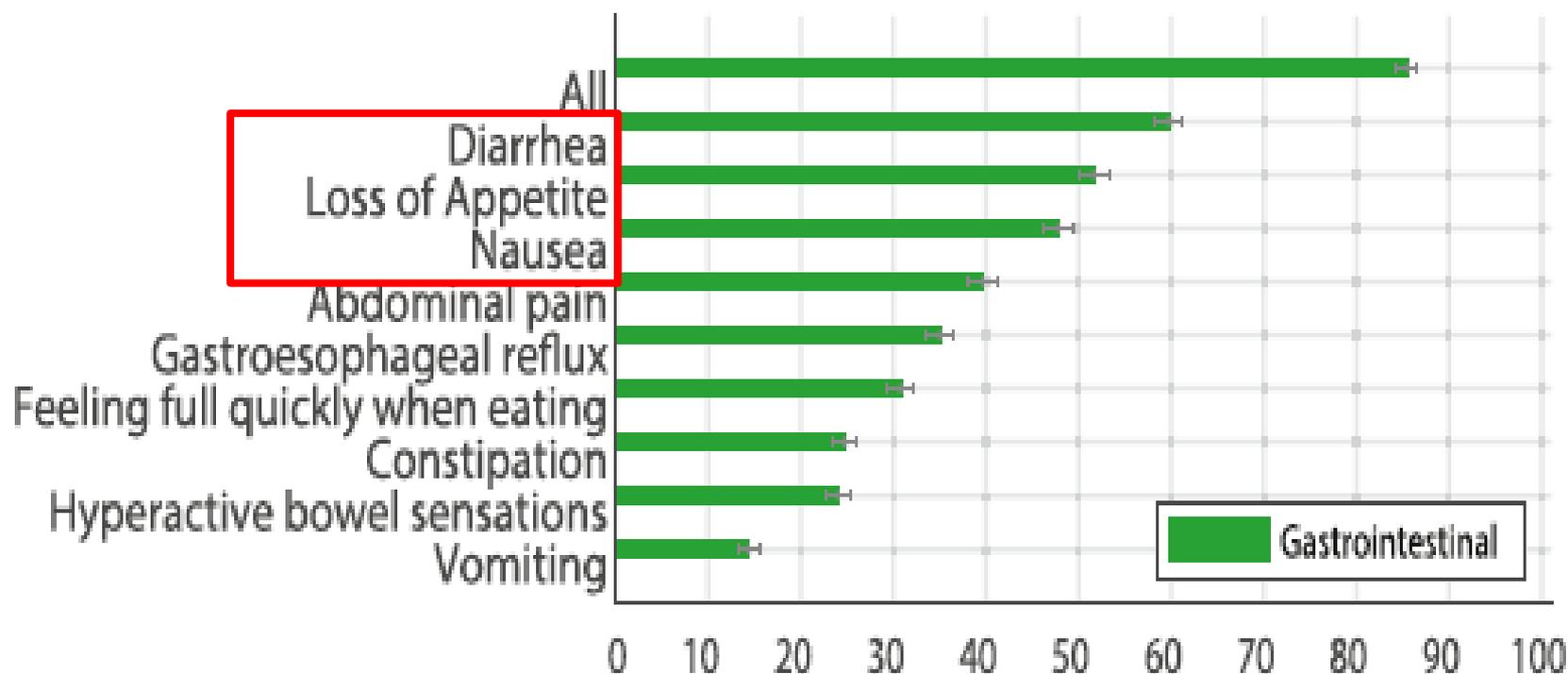
Sintomi cardio-vascolari



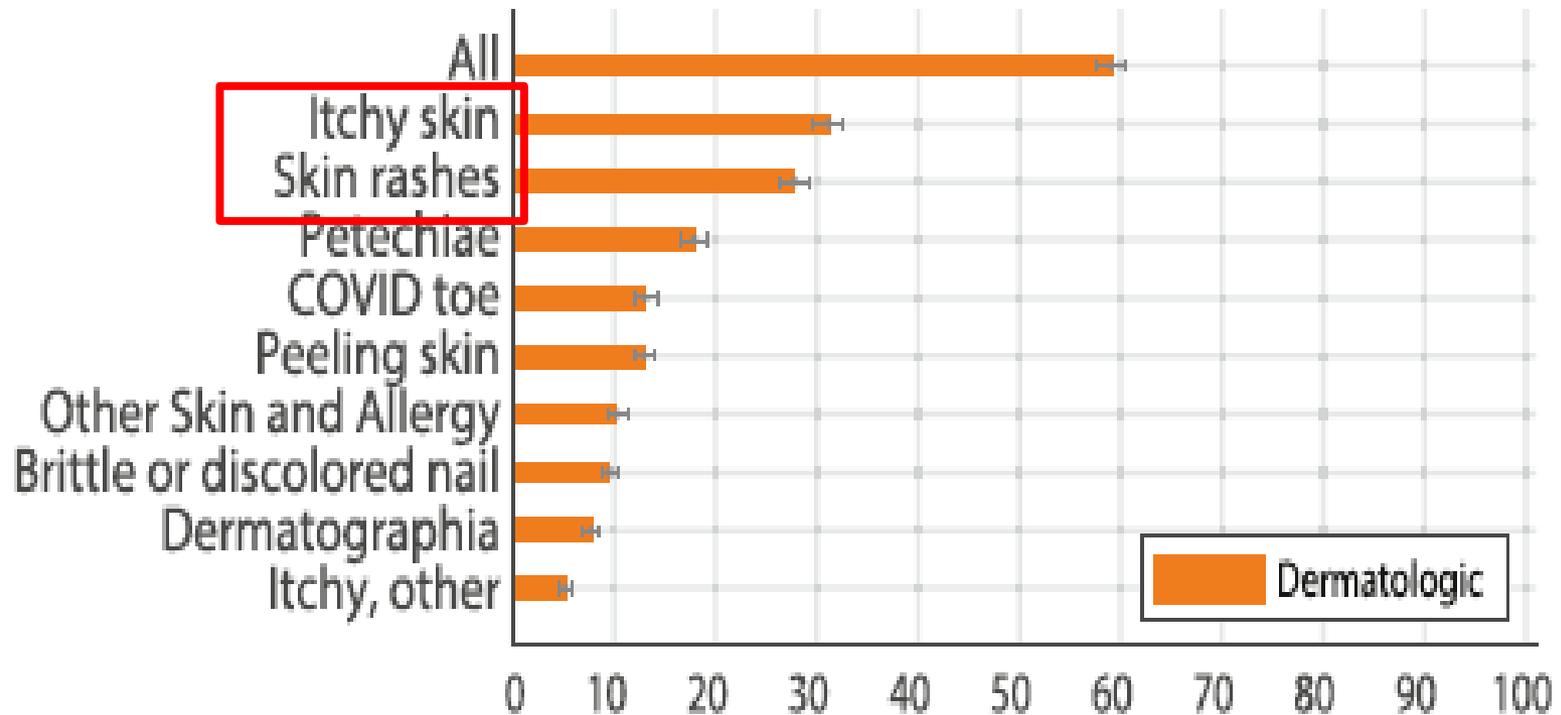
Sintomi muscolo-scheletrici



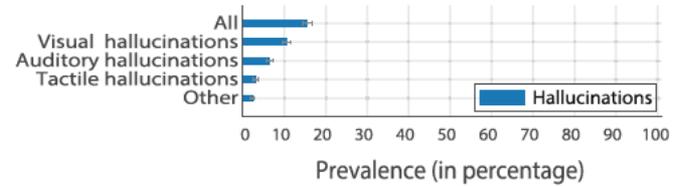
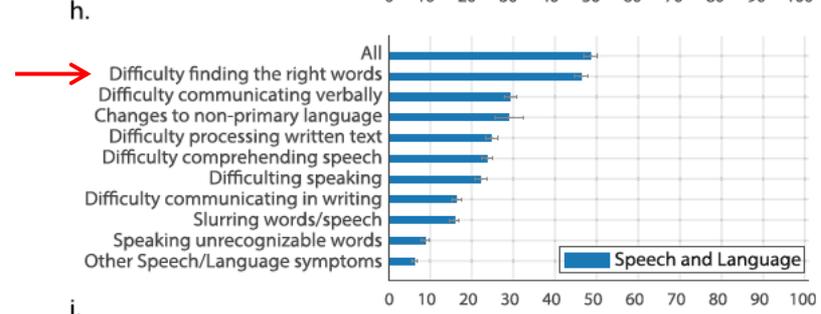
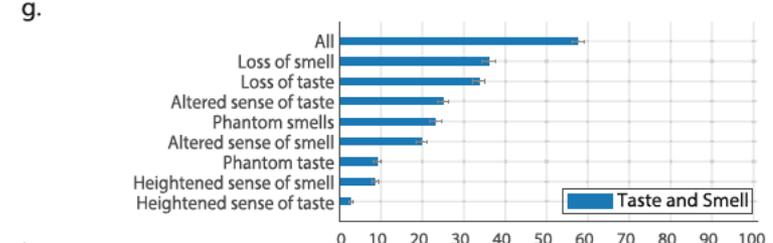
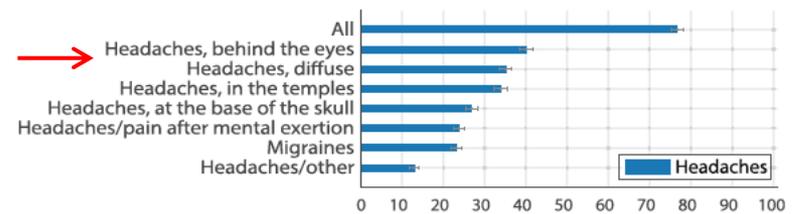
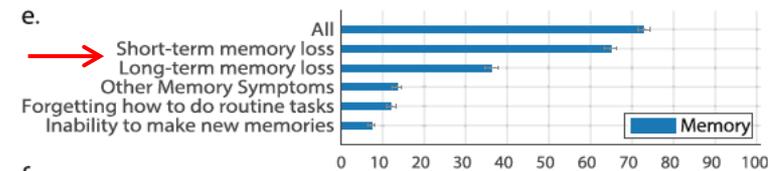
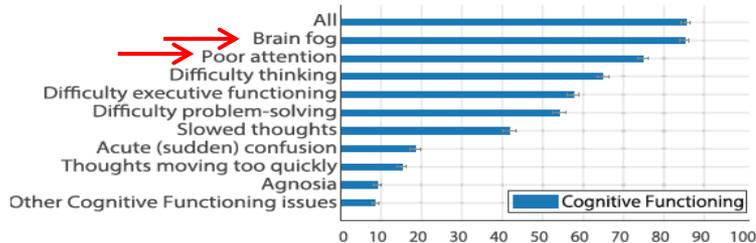
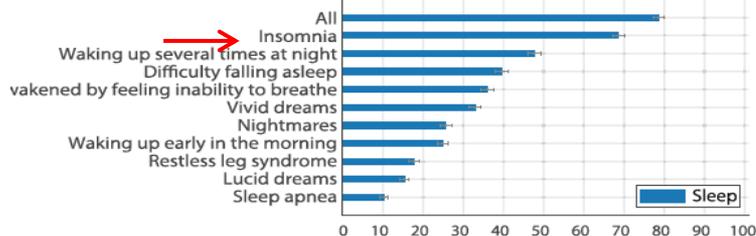
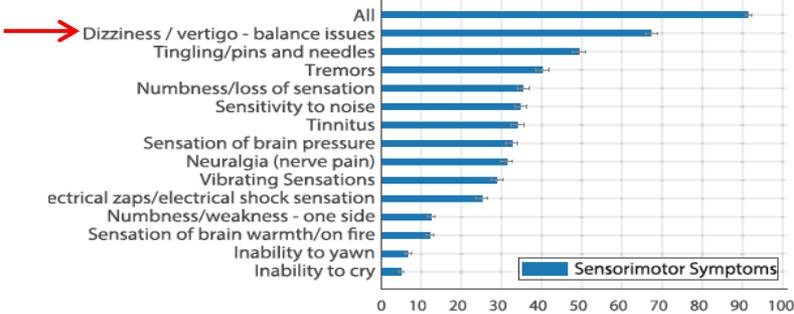
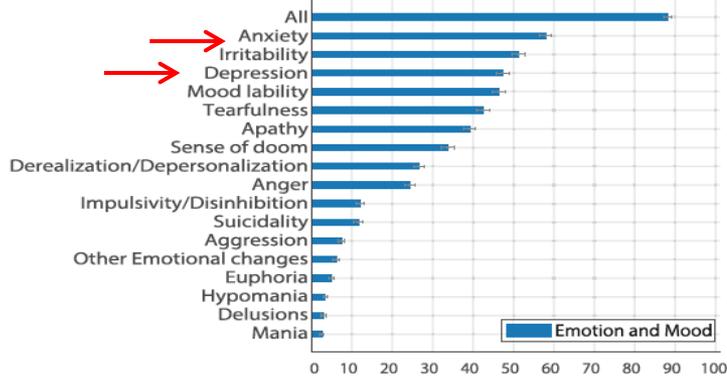
Sintomi gastro-intestinali



Sintomi dermatologici



Sintomi neuro-psichiatrici



Prevalence (in percentage)

Sindromi specifiche

Post-Exertional Malaise (PEM)

Peggioramento o ripresa dei sintomi dopo sforzo fisico o mentale

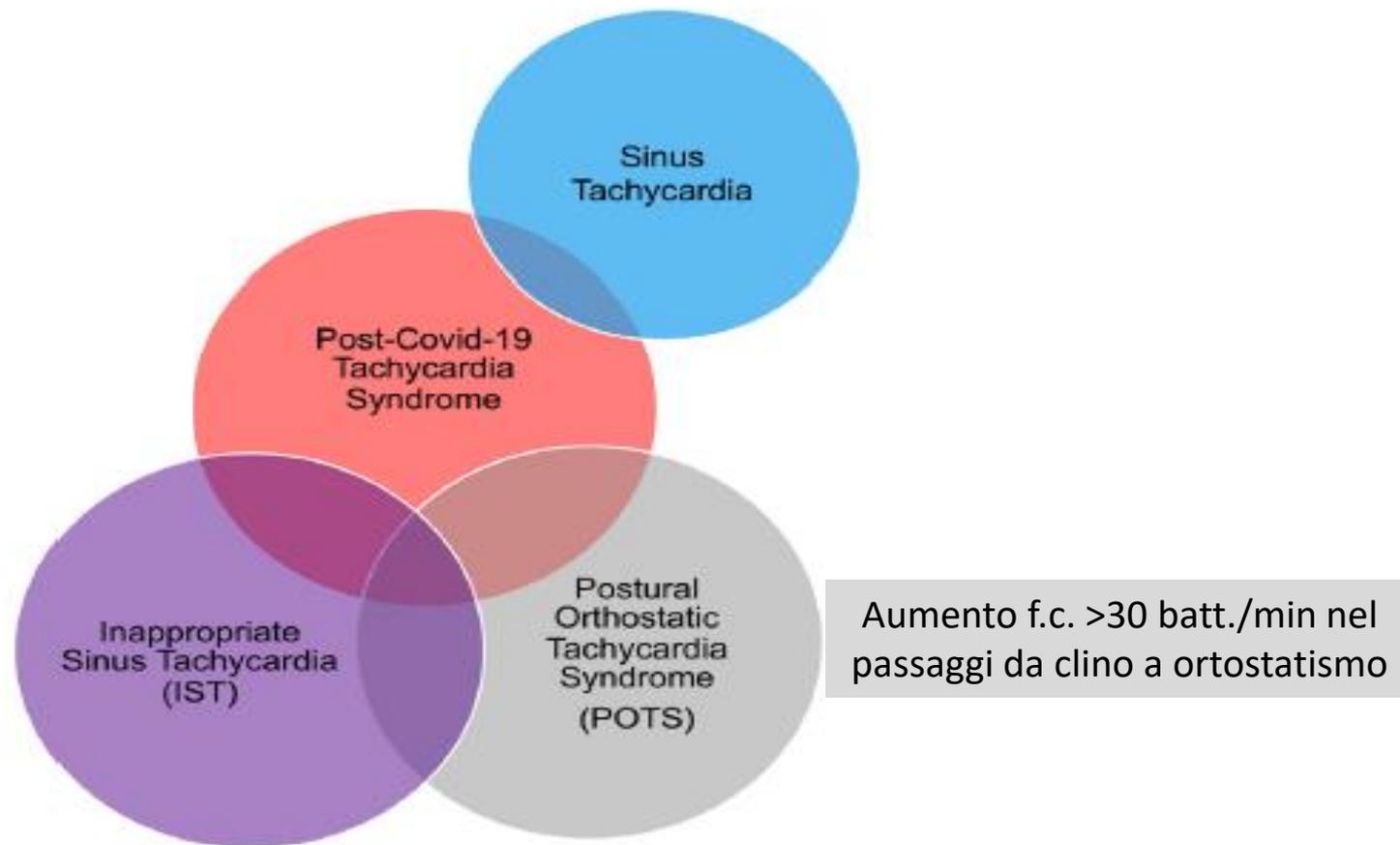
Myalgic Encephalomyelitis (ME) / Chronic Fatigue Syndrome (CFS)

Astenia invalidante, perdita di memoria, incapacità a concentrarsi

Post-COVID-19 Tachycardia Syndrome: A Distinct Phenotype of Post-Acute COVID-19 Syndrome



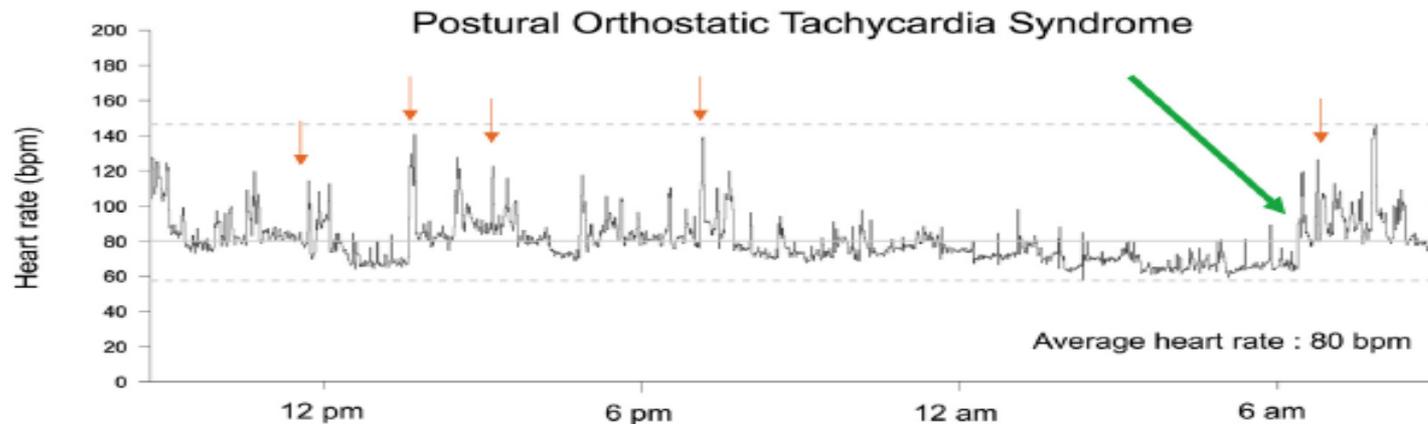
Marcus Ståhlberg, MD, PhD,^a Ulrika Reistam, MD,^a Artur Fedorowski, MD, PhD,^{b,c} Humberto Villacorta, MD,^d Yu Horiuchi, MD,^e Jeroen Bax, MD,^f Bertram Pitt, MD,^g Simon Matskeplishvili, MD,^h Thomas F. Lüscher, MD, PhD,^{i,j} Immo Weichert, MD,^k Khalid Bin Thani, MD,^l Alan Maisel, MD^m



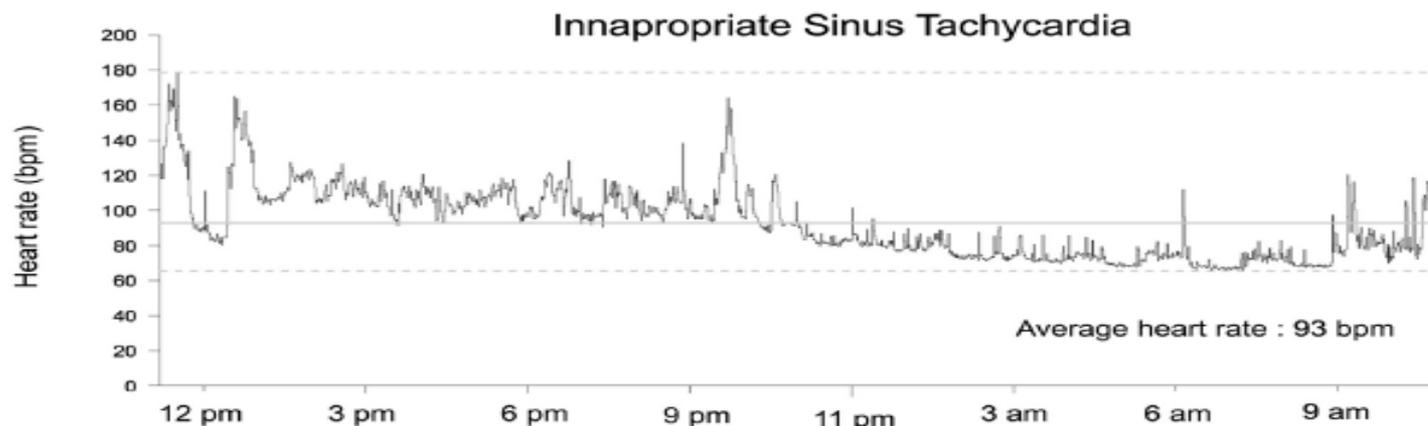
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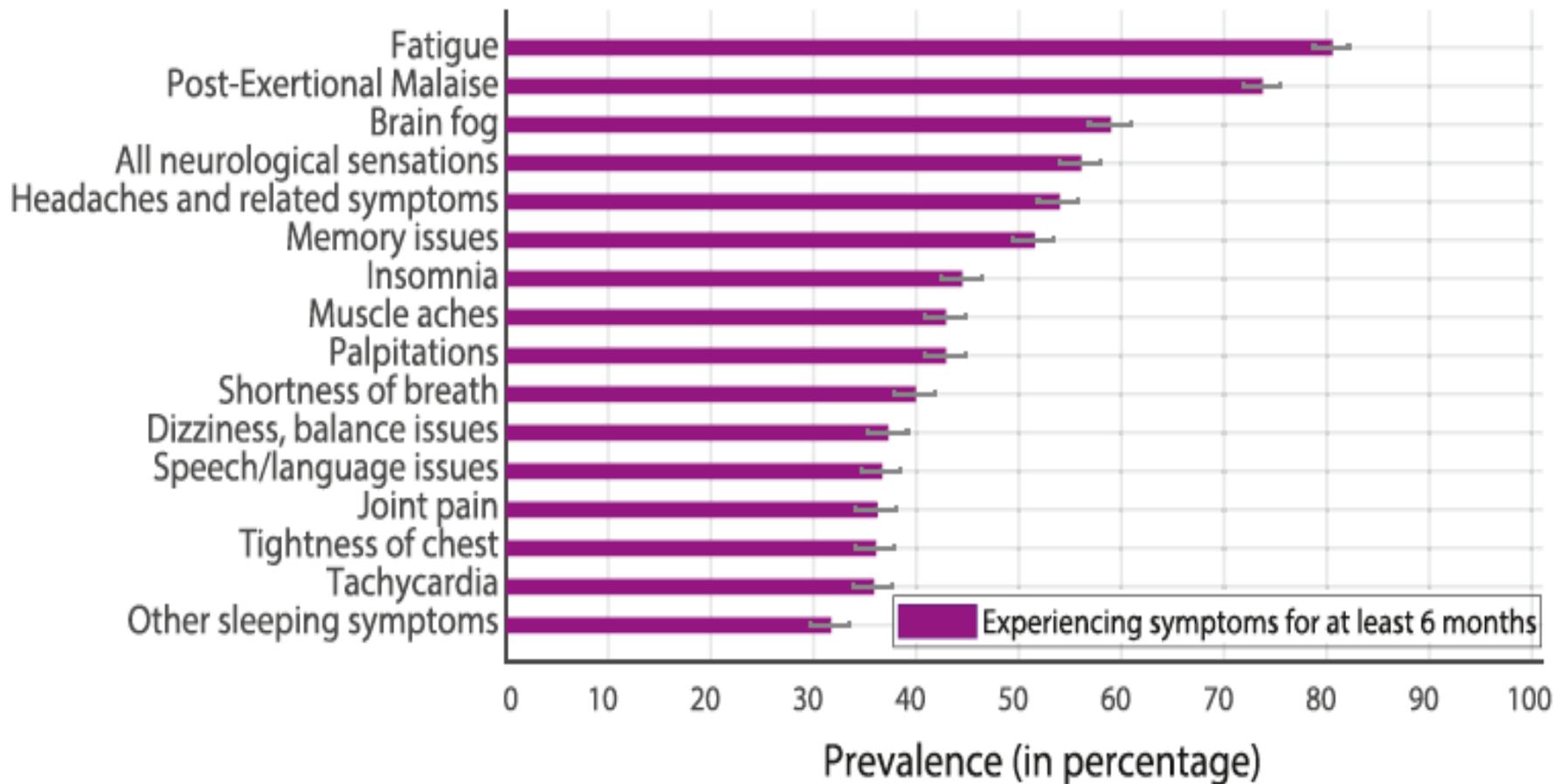
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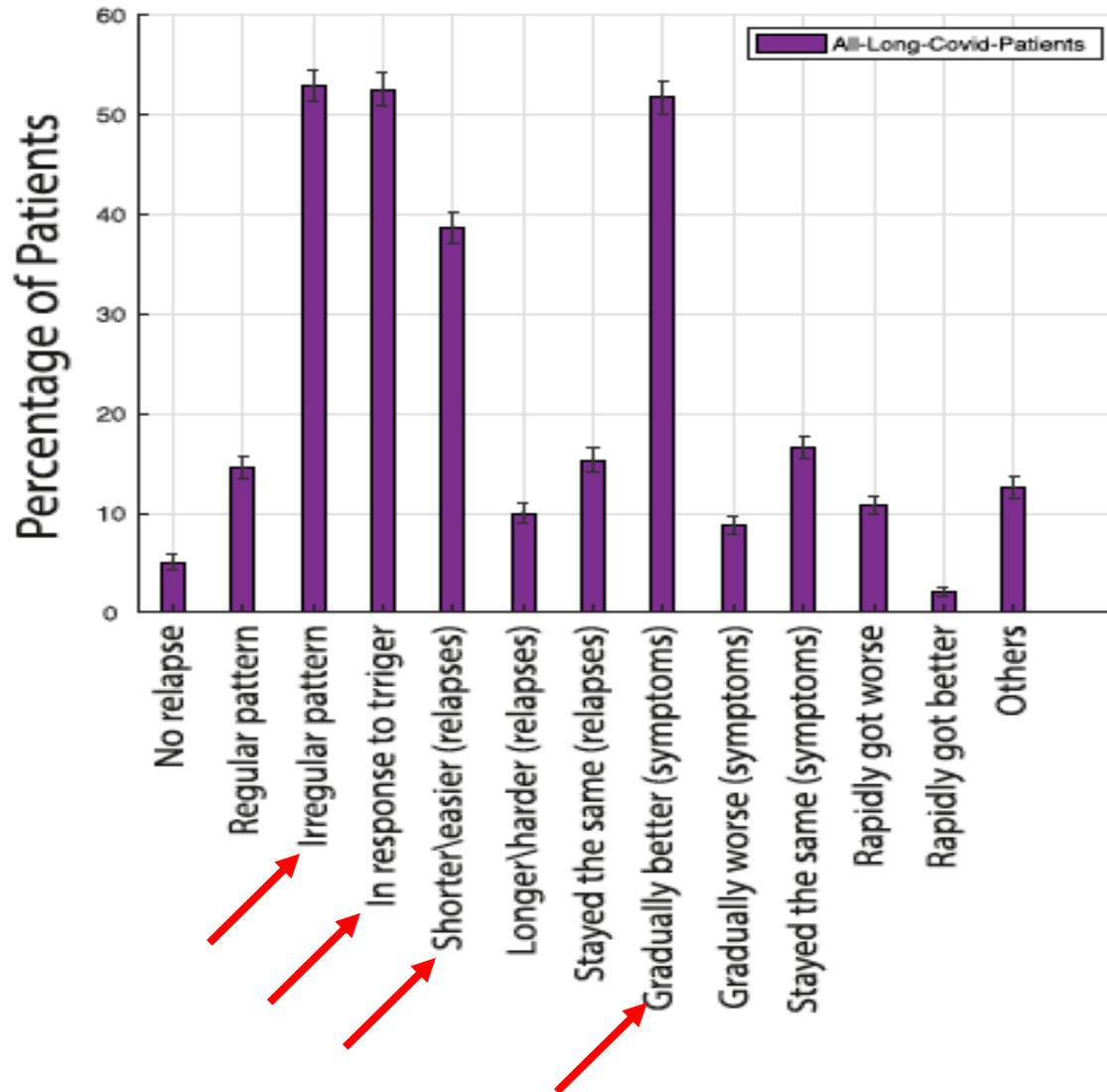
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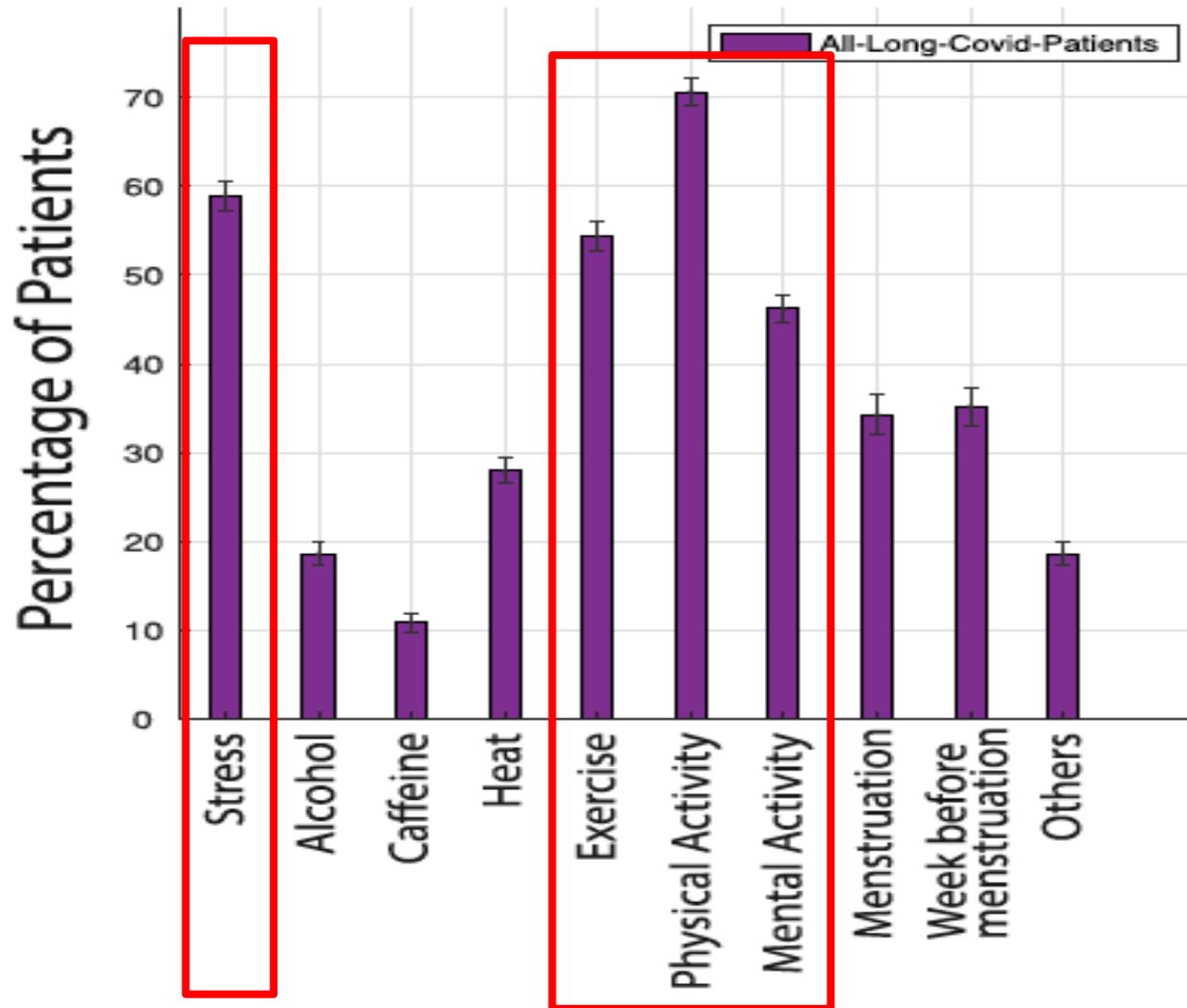
Persistenza dei sintomi dopo 6 mesi



Recidive ed andamento dei sintomi



Fattori scatenanti



Trattamento

Date le scarse conoscenze patogenetiche, terapie farmacologiche specifiche sono molto limitate.

Terapie sintomatiche:

- **Per tachicardia: betabloccanti o ivabradina**
- **Per le debolezza muscolare e l'atonia intestinale: piridostigmina**
- **Per deficit di attenzione e ideazione (brain fog): modafinil**

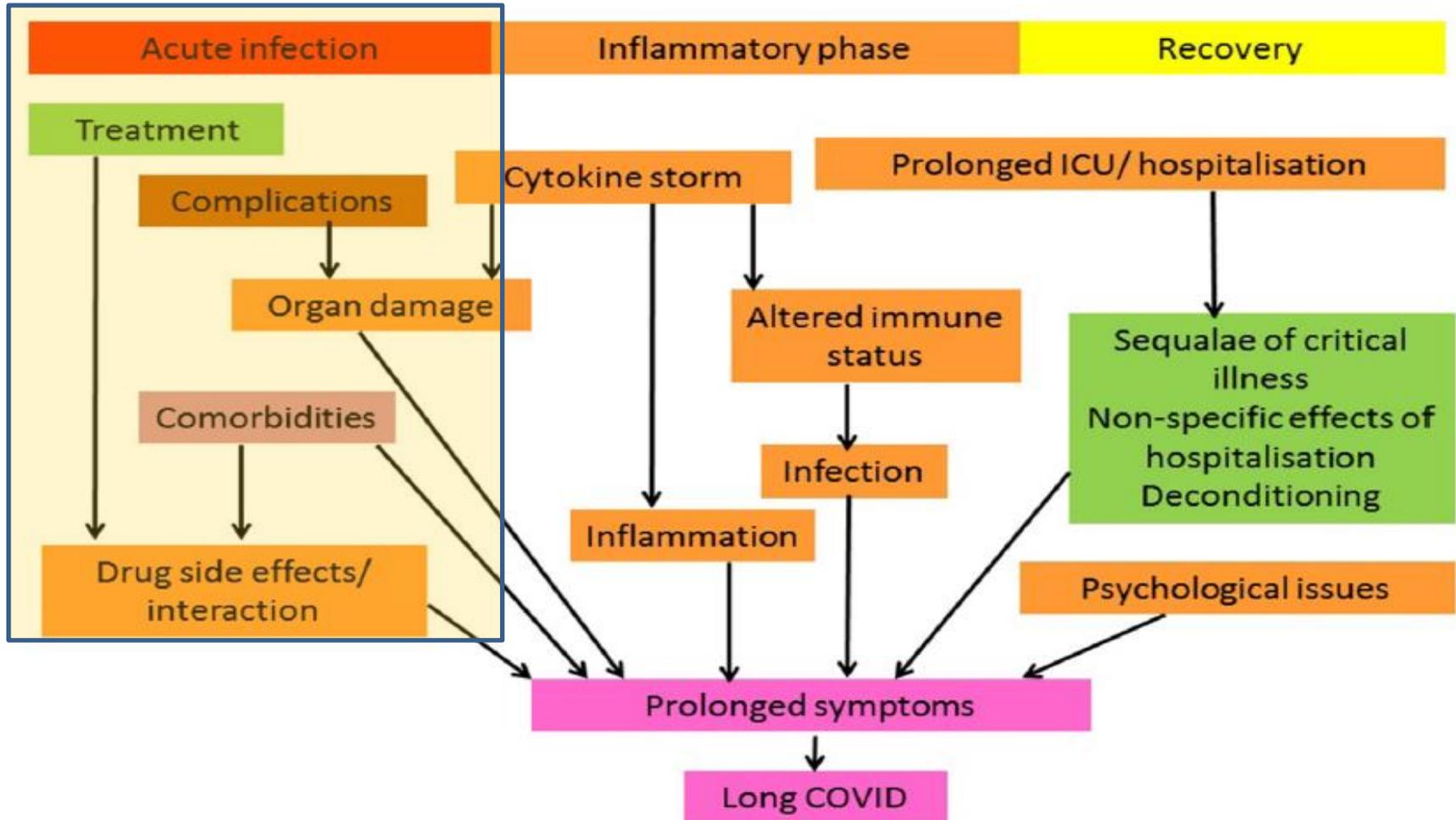
Corretta gestione delle comorbidità

Mobilizzazione precoce

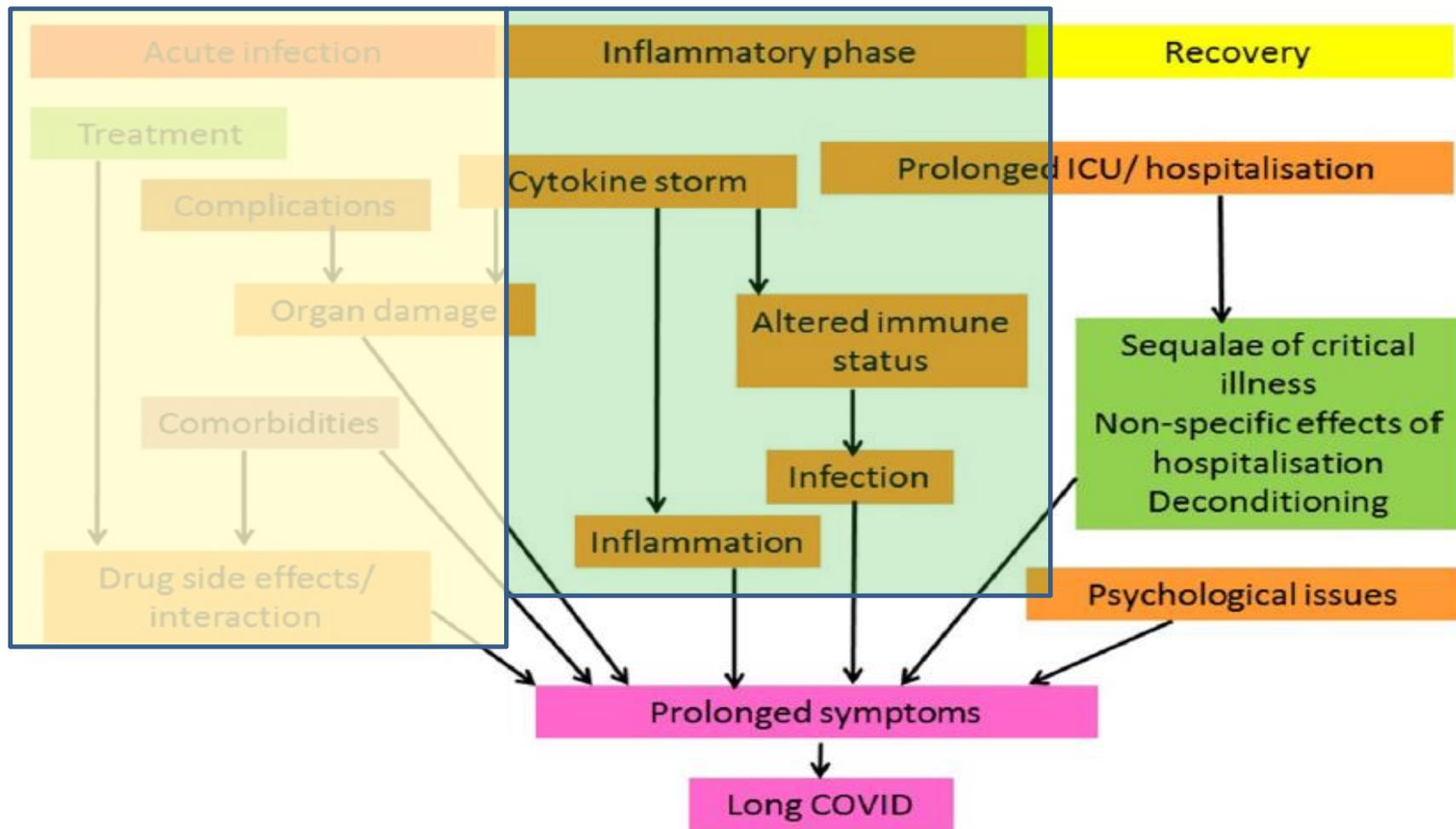
Riabilitazione fisica, polmonare, cardiovascolare e mentale

Supporto psicologico

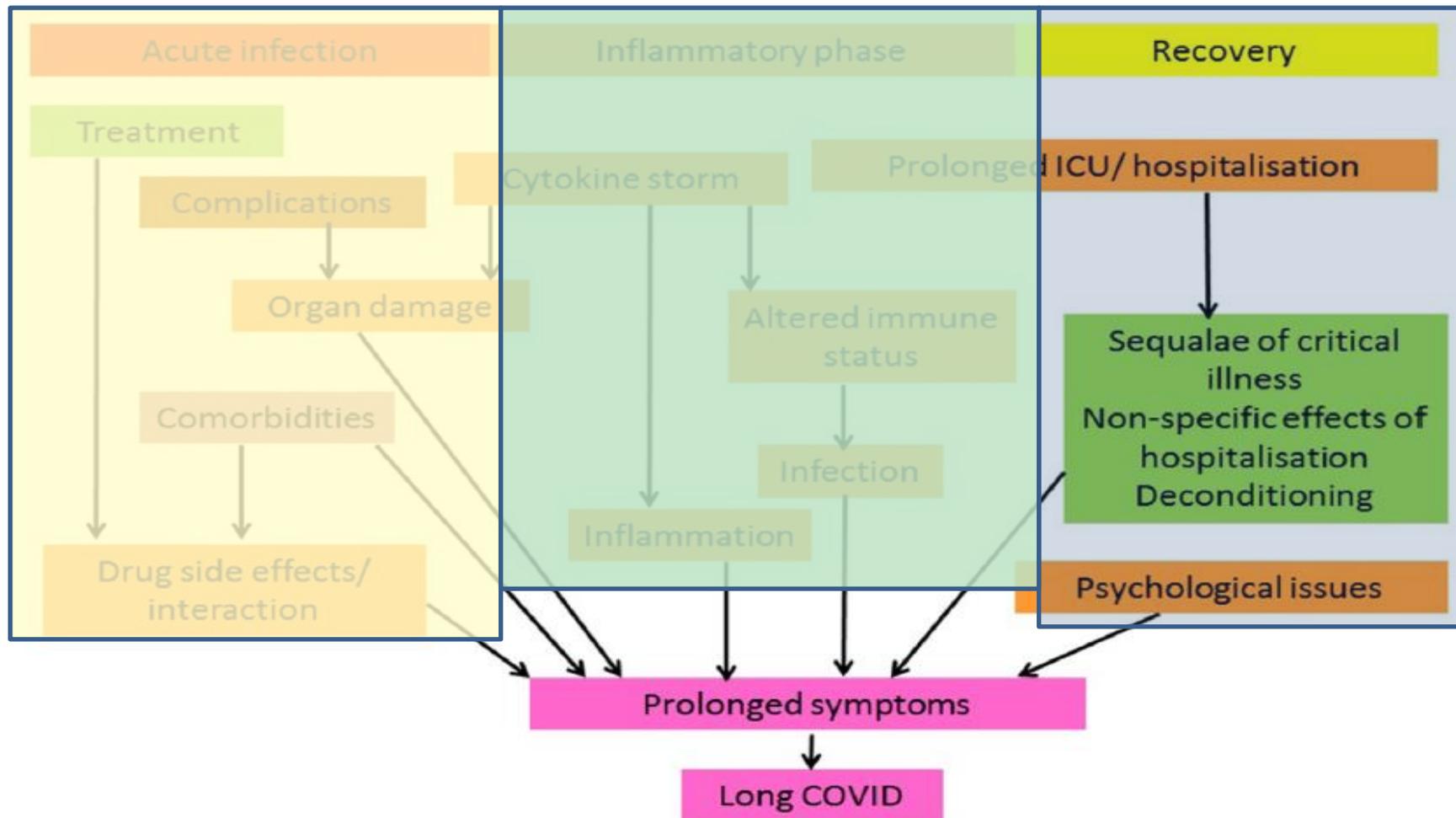
Possibili meccanismi pato-fisiologici del Long-COVID



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Possibili meccanismi pato-fisiologici del Long-COVID



Possibili meccanismi pato-fisiologici del Long-COVID

- **Neuroinvasività del SARS-CoV-2**
- **Danno di organi e tessuti**
- **Persistenza del virus in alcuni tessuti con disregolazione immunitaria**
- **Attivazione di altri virus neurotropi**
- **Attivazione di batteri, funghi e protozoi del microbiota**

Impact of the post-COVID-19 condition on health care after the first disease wave in Lombardy

■ Pier M. Mannucci¹, Alessandro Nobili² , Mauro Tettamanti², Barbara D'Avanzo², Alessia A. Galbussera², Giuseppe Remuzzi², Ida Fortino³, Olivia Leoni³ & Sergio Harari^{4,5}

From the ¹Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Angelo Bianchi Bonomi Hemophilia and Thrombosis Center and University of Milan, Milan, Italy; ²Department of Health Policy, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy; ³Direzione Generale Welfare, Regione Lombardia, Milan, Italy; ⁴Department of Clinical Sciences and Community Health, Università di Milano, Milan, Italy; and ⁵Division of Internal Medicine, Ospedale San Giuseppe MultiMedica IRCCS, Milan, Italy

Esame strumentale	incremento
Spirometria	x 50
CT torace (ICU)	x 32
CT torace (reparto ordinario)	x 5.5
ECG (ICU)	x 5.5
ECG (reparto ordinario)	x 2



Quadri clinici

PEM, ME-CFS, POTS, IST

Evidenze strumentali

TAC torace (nel 72% dei paz. a 2 mesi e nel 50% dei paz. a 3 mesi)

Biomarcatori (PCR, linfociti, d-dimero, interleukina 6, troponina)

Nessuna evidenza clinica o strumentale

Storia di ansia e depressione

Anamnesi di precedenti psichiatrici

Nessun legame con gravità iniziale

Post-COVID Syndrome



Pre-COVID Syndrome



PAUL JOYNER | BRIEFMASTER | MICHAEL BAKER

THE GREAT COVID PANIC

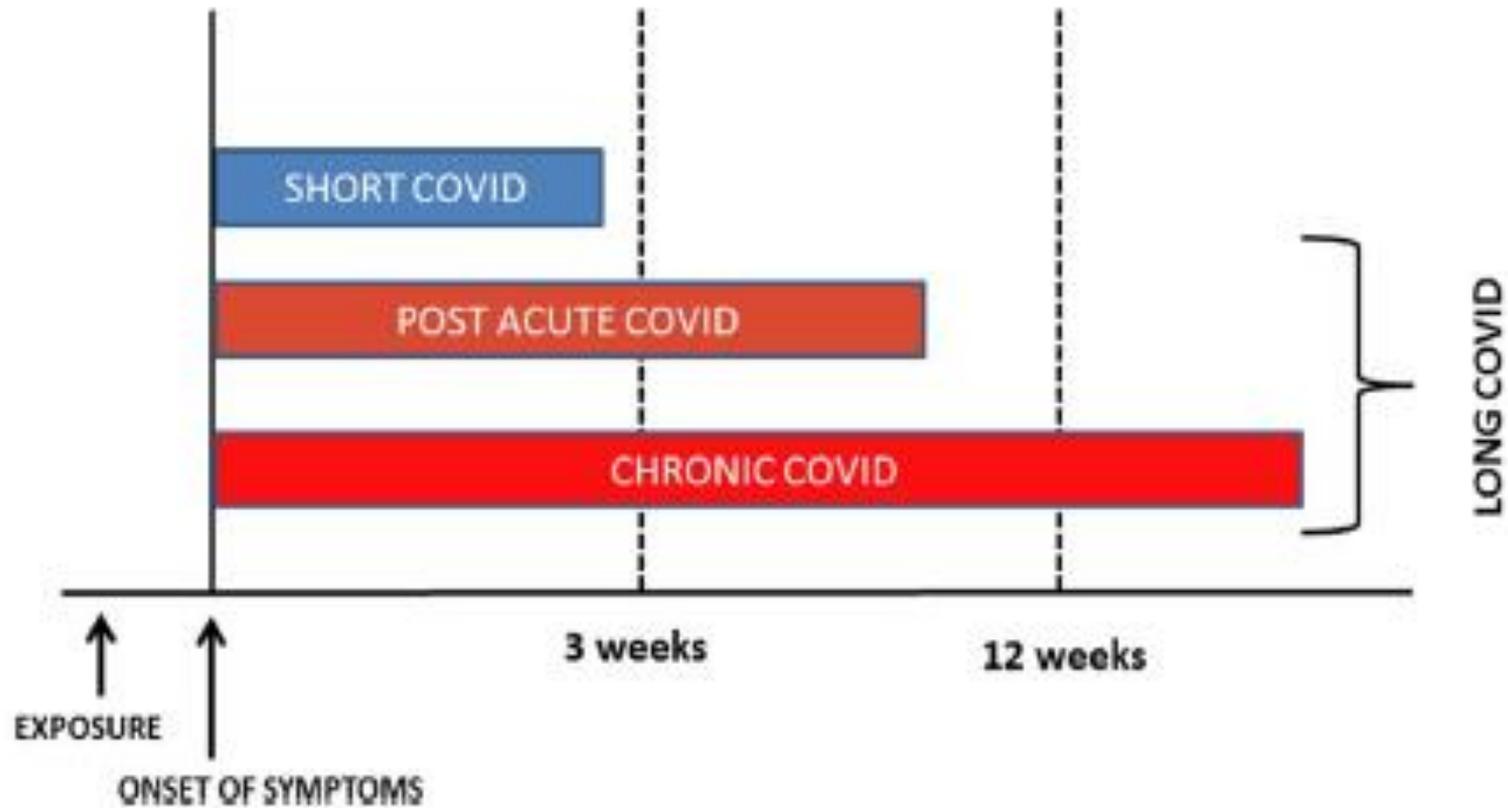
WHAT HAPPENED,
WHY, AND WHAT TO DO NEXT



Conclusioni

- Il COVID è spesso una malattia a lungo invalidante
- I sintomi del long COVID sono disparati e solo in alcuni casi si associano ad evidenze cliniche o ad alterazioni degli esami diagnostici
- Il peso assistenziale per le visite di controllo e gli accertamenti strumentali è assolutamente rilevante e contribuisce al sovraccarico del SSN

COVID-19: possibile evoluzione



Fattori di rischio

- **Età superiore ai 50 anni**
- **Sesso femminile (nella fascia di età più giovane)**
- **obesità**
- **asma**
- **Avere più di cinque sintomi nella prima settimana di infezione da COVID-19 (come tosse, affaticamento, mal di testa, diarrea, perdita dell'olfatto).**

DIMENSIONI DEL PROBLEMA

I sintomi persistenti sono più frequenti:

- **Nelle donne**
- **Nell'età avanzata (proporzione lineare)**

Non c'è correlazione con la gravità della forma acuta

Fino al 70% dei pazienti a basso rischio di mortalità ha disfunzione di uno o più organi (cuore, polmoni, reni, fegato, pancreas) dopo 4 mesi dalla fase acuta

Approccio al paziente con Long-COVID

