

# COVID 19 & MEDICAL HUMANITIES

## Newsletter Scientifica

“Dietro ogni problema c'è un'opportunità” - Galileo Galilei



Keith Haring "Pop Shop I (1)" - 1987

Questa newsletter settimanale, redatta dal Servizio Formazione e Sviluppo Risorse Umane della ASL BI in collaborazione con la Biblioteca Biomedica 3Bi, si rivolge ai professionisti sanitari impegnati nella fase di emergenza Covid-19.

Fedeli alla filosofia che ha animato l'agire del nostro Servizio, la newsletter Covid 19 & Medical Humanities affianca alle risorse bibliografiche e agli articoli tratti dalle principali fonti istituzionali e scientifiche alcuni contributi che fanno riferimento alle discipline umanistiche.

Crediamo nel valore generato dall'integrazione dei saperi e ci auguriamo che la pubblicazione incontri il vostro gradimento.

Buona lettura!

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**Newsletter**



Pagina Pensieri Circolari



Pagina Fondazione 3Bi

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VI SEGNALIAMO che sul portale della BVS-P potete consultare nella sezione **RISORSE** → **LIBRI**, l'intera Collana "IN PRATICA" edita da **Pensiero Scientifico Editore**.

Si tratta di una raccolta di guide che affrontano argomenti attuali e rilevanti con un approccio pragmatico utile nella pratica clinica quotidiana.



Per ricercare  
la letteratura internazionale

La Biblioteca Virtuale per la Salute - Piemonte è uno strumento di supporto all'attività degli Operatori della sanità piemontese. La BVS-P offre periodici elettronici e banche dati agli operatori della sanità piemontese per consentire loro di ricercare progressi e significati nella letteratura scientifica, sui temi della salute e dell'ambiente. Inoltre si propone di promuovere la medicina basata sulle evidenze, e di contribuire alla formazione nel campo della ricerca bibliografica e della valutazione critica della letteratura scientifica.

## Articoli Consigliati

Lancet Microbe 2020 November 19, 2020 [https://doi.org/10.1016/S2666-5247\(20\)30172-5](https://doi.org/10.1016/S2666-5247(20)30172-5)

[SARS-CoV-2, SARS-CoV, and MERS-CoV viral load dynamics, duration of viral shedding, and infectiousness: a systematic review and meta-analysis](#)

Muge Cevik, Matthew Tate, Ollie Lloyd, Alberto Enrico Maraolo, Jenna Schafers, Antonia Ho

### Summary

**Background** Viral load kinetics and duration of viral shedding are important determinants for disease transmission.

We aimed to characterise viral load dynamics, duration of viral RNA shedding, and viable virus shedding of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in various body fluids, and to compare SARS-CoV-2, SARS-CoV, and Middle East respiratory syndrome coronavirus (MERS-CoV) viral dynamics.

**Methods** In this systematic review and meta-analysis, we searched databases, including MEDLINE, Embase, Europe PubMed Central, medRxiv, and bioRxiv, and the grey literature, for research articles published between Jan 1, 2003, and June 6, 2020. We included case series (with five or more participants), cohort studies, and randomised controlled trials that reported SARS-CoV-2, SARS-CoV, or MERS-CoV infection, and reported viral load kinetics, duration of viral shedding, or viable virus. Two authors independently extracted data from published studies, or contacted authors to request data, and assessed study quality and risk of bias using the Joanna Briggs Institute Critical Appraisal Checklist tools. We calculated the mean duration of viral shedding and 95% CIs for every study included and applied the random-effects model to estimate a pooled effect size. We used a weighted meta-regression with an unrestricted maximum likelihood model to assess the effect of potential moderators on the pooled effect size. This study is registered with PROSPERO, CRD42020181914.

**Findings** 79 studies (5340 individuals) on SARS-CoV-2, eight studies (1858 individuals) on SARS-CoV, and 11 studies (799 individuals) on MERS-CoV were included. Mean duration of SARS-CoV-2 RNA shedding was 17.0 days (95% CI 15.5-18.6; 43 studies, 3229 individuals) in upper respiratory tract, 14.6 days (9.3-20.0; seven studies, 260 individuals) in lower respiratory tract, 17.2 days (14.4-20.1; 13 studies, 586 individuals) in stool, and 16.6 days (3.6-29.7; two studies, 108 individuals) in serum samples. Maximum shedding duration was 83 days in the upper respiratory tract, 59 days in the lower respiratory tract, 126 days in stools, and 60 days in serum. Pooled mean SARS-CoV-2 shedding duration was positively associated with age (slope 0.304 [95% CI 0.115-0.493];  $p=0.0016$ ). No study detected live virus beyond day 9 of illness, despite persistently high viral loads, which were inferred from cycle threshold values. SARS-CoV-2 viral load in the upper respiratory tract appeared to peak in the first week of illness, whereas that of SARS-CoV peaked at days 10-14 and that of MERS-CoV peaked at days 7-10.

**Interpretation** Although SARS-CoV-2 RNA shedding in respiratory and stool samples can be prolonged, duration of viable virus is relatively short-lived. SARS-CoV-2 titres in the upper respiratory tract peak in the first week of illness.

Early case finding and isolation, and public education on the spectrum of illness and period of infectiousness are key to the effective containment of SARS-CoV-2.

Funding None

Circolare del Ministero della salute del 30 novembre 2020.

[Circolare recante "Gestione domiciliare dei pazienti con infezione da SARS-CoV-2"](#).

N Engl J Med. 2020 Dec 3;383(23):2255-2273. doi: 10.1056/NEJMra2026131.

### Cytokine Storm

David C Fajgenbaum 1, Carl H June 1

PMID: 33264547

**Abstract:** The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic has reminded us of the critical role of an effective host immune response and the devastating effect of immune dysregulation. This year marks 10 years since the first description of a cytokine storm that developed after chimeric antigen receptor (CAR) T-cell therapy<sup>1</sup> and 27 years since the term was first used in the literature to describe the engraftment syndrome of acute graft-versus-host disease after allogeneic hematopoietic stem-cell transplantation.<sup>2</sup> The term “cytokine release syndrome” was coined to describe a similar syndrome after infusion of muromonab-CD3 (OKT3).<sup>3</sup> Cytokine storm and cytokine release syndrome are life-threatening systemic inflammatory syndromes involving elevated levels of circulating cytokines and immune-cell hyperactivation that can be triggered by various therapies, pathogens, cancers, autoimmune conditions, and monogenic disorders.

From a historical perspective, cytokine storm was previously referred to as an influenza-like syndrome that occurred after systemic infections such as sepsis and after immunotherapies such as Coley’s toxins.<sup>4</sup> *Yersinia pestis* infection (i.e., the plague) has led to major pandemics (e.g., the Black Death) and triggers alveolar macrophages to produce excessive amounts of cytokines, resulting in cytokine storm.<sup>5</sup>

An exaggerated immune response was suspected to contribute to the lethality of the 1918-1919 influenza pandemic. In fact, a reconstructed H1N1 virus isolated from the 1918 pandemic, as compared with common reference strains of the virus that causes influenza A, triggered marked pulmonary inflammation in mice.<sup>6</sup>

Recognition that the immune response to the pathogen, but not the pathogen itself, can contribute to multiorgan dysfunction and that similar cytokine storm syndromes could occur with no obvious infection led to the investigation of immunomodulators and cytokine-directed therapies. One of the earliest targeted therapies for abrogation of a cytokine storm was the anti-interleukin-6 receptor monoclonal antibody tocilizumab, which was developed for the treatment of idiopathic multicentric Castleman’s disease in the 1990s. A host of other disorders have been described as causes of cytokine storm and targeted with immune-directed therapies, such as sepsis, primary and secondary hemophagocytic lymphohistiocytosis (HLH), autoinflammatory disorders, and coronavirus disease 2019 (Covid-19).

### COVID-19: l’essenziale in tre tempi

<https://drive.google.com/file/d/1ihqkYgMIX9KJqDbrkY55JtS307mM447y/view?usp=sharing>

La Colonia - Gruppo di ricerca Italo-Tedesco

Notizie, opinioni e giudizi sul COVID-19 sono da mesi l’argomento principale su ogni mezzo di comunicazione. Sfortunatamente il linguaggio dei media si riduce a poche parole e spesso frasi vengono estrapolate dal loro contesto e diventano titoli o bandiere. In aggiunta, virologi, epidemiologi, medici d’urgenza, infettivologi pneumologi ed intensivisti raccontano il COVID-19 dal loro punto di vista che riguarda, sostanzialmente, i pazienti osservati in una particolare fase della loro malattia: più precoce per pneumologi e infettivologi, più tardiva per gli intensivisti. La specializzazione è come un punteruolo: scava in profondità ma su una superficie ridotta. Ogni specialista ha una vista sicuramente acuta, ma un campo visivo limitato.

Qui, nella Colonia, abbiamo la fortuna di poter osservare, attraverso contatti continui con colleghi infermieri, infettivologi, pneumologi ed intensivisti da tante nazioni diverse, tutta l’evoluzione della malattia. Uno dei tratti impressionanti della malattia da COVID-19 è la velocità di progressione, che può arrestarsi in qualsiasi fase, o progredire fino al decesso.

Desideriamo qui riassumere la nostra visione della malattia da COVID-19 sottolineando i punti sui quali la nostra opinione differisce sostanzialmente da quella di altri colleghi. Questo contributo non ha certo passato il vaglio di una “revisione alla pari” a cui tutta la produzione scientifica deve sottostare. Al di là dei lavori scientifici, che sono il vero esito della nostra quotidiana attività di ricerca, questo contributo rappresenta semplicemente il riassunto di contatti, lavori e confronti giornalieri. Così, per secoli, ha progredito la medicina. Per semplicità, possiamo dividere la malattia da COVID-19, la cui più comune manifestazione è la polmonite, in tre fasi, tra loro in successione. Nella prima, precoce, il paziente viene osservato in pronto soccorso. La seconda fase, intermedia, si svolge generalmente in un reparto COVID ed infine la fase tardiva si svolge prevalentemente in Terapia Intensiva. Di ogni fase descriveremo le caratteristiche biologiche, i trattamenti possibili e quali siano, a nostro avviso, quelli da preferire. Fase precoce: Su 100 pazienti venuti a contatto con il virus (quelli cioè che risulterebbero positivi al tampone se estati), una certa frazione (che non conosciamo), presenta sintomi tali da rivolgersi al medico curante o direttamente in ospedale. Non sappiamo perché alcuni soggetti risultino completamente asintomatici, mentre altri presentino sintomi di diversa gravità. In linea generale la gravità di qualsiasi malattia infettiva dipende dalla “quantità” dell’agente infettante e dalla qualità di risposta dell’organismo con cui viene a contatto. Inizialmente il virus, attraverso le vie aeree, entra nei polmoni e da qui, per via ematica, può diffondersi ai diversi organi e apparati (cuore, rene, intestino, sistema nervoso centrale etc..). Nei pazienti che sviluppano la malattia e si presentano in pronto soccorso, i sintomi più comuni sono: febbre, tosse, mialgie e diarrea. In uno studio attualmente al vaglio dei revisori, le frequenze dei sintomi sopra elencati erano rispettivamente: 84.8%, 78.4%, 12.2% e 10.7%. Il bersaglio principale del virus è tuttavia il polmone. Alla Tomografia Computerizzata (TC) nei casi di polmoniti il polmone presenta delle densità polmonari bilaterali a vetro smerigliato. Qui di seguito riportiamo tre esempi rappresentativi di questa condizione.





Intensive Care Medicine volume 46, pages1777-1778 (2020)  
Letter, Published: 12 June 2020

### Pericyte alteration sheds light on micro-vasculopathy in COVID-19 infection

Nathalie Cardot-Leccia, Thomas Hubiche, Jean Dellamonica, Fanny Burel-Vandenbos & Thierry Passeron

Dear Editor,

Understanding the mechanisms involved in SARS-CoV-2 infection is crucial to provide more efficient therapeutic approaches. Here, we report the histological patterns of skin and lung post-mortem analysis in patients hospitalized in intensive care unit that revealed a micro-vasculopathy secondary to pericyte alteration.

After family consent, we performed in-depth histological analysis, with a special focus on micro-vascularization, of post-mortem biopsies from COVID-19 positive patients hospitalized in intensive care unit. (Lung biopsies were taken from 2 patients, and skin biopsies from 4 patients.) The normal lung tissue used as control was from a 16-year-old patient cured for pneumothorax.

Schede Tecniche Fadoi (Federazione Delle Associazioni Dirigenti Ospedalieri Internisti)

### Covid-19 E Gestione Terapia Anticoagulante

J Adv Nurs. 2020 Dec 1. doi: 10.1111/jan.14718. Online ahead of print.

### Knowledge, attitude and practice of residents in the prevention and control of COVID-19: An online questionnaire survey

Kaihan Yang 1 2, Hui Liu 3, Lihua Ma 1, Song Wang 1, Yali Tian 1, Feifei Zhang 1, Zhuyue Li 1, Yuanyuan Song 1, Xiaolian Jiang 1

PMID: 33259651 DOI: 10.1111/jan.14718

**Abstract:** Aims: To explore the status quo and the influencing factors of residents' knowledge, attitude and practice in the prevention and control of coronavirus disease 2019 (COVID-19), as well as the difficulties or challenges perceived by residents in their preventive practice.

**Design:** An online questionnaire survey.

**Methods:** The self-designed questionnaire was distributed among residents online in February 2020. Descriptive statistics, two independent samples t-tests, one-way analysis of variance (ANOVA), Pearson's correlation analysis, multivariate linear regression and content analysis were performed.

**Results:** A total of 919 valid questionnaires were collected. The scoring rates of residents' knowledge, attitude and practice were 85.2%, 92.9% and 84.4%, respectively. Main factors influencing residents' knowledge included gender and occupation; while those influencing attitude were occupation, family economic level and knowledge; and those influencing practice included place of residence, occupation, with or without chronic disease, knowledge and attitude. Mass media was the primary approach for people to learn the knowledge and information of COVID-19. Difficulties or challenges faced were mainly lack of protective equipments, concerns about the risk of prevention and control, impact on daily life, work and study, lack of knowledge and consensus, psychological problems and information problems.

**Conclusion:** The attitude of residents towards COVID-19 prevention and control is generally positive. The knowledge and practice have been popularized to a certain extent, but there are still deviations or deficiencies in residents' understanding of certain important knowledge and the adoption of relevant preventive measures. Evidence-based tailored public education initiatives are indicated.

**Impact:** Findings of this study add important knowledge about residents' understanding, attitude, practice and the influencing factors on COVID-19 prevention and control, which serves as a scientific foundation for optimizing the pandemic public education and decision-making.

**Keywords:** COVID-19; attitude; knowledge; nursing; practice; residents; survey.



Nat Commun. 2020 Nov 25;11(1):5986. doi: 10.1038/s41467-020-19818-2.

### [No evidence for increased transmissibility from recurrent mutations in SARS-CoV-2](#)

Lucy van Dorp 1, Damien Richard 2 3, Cedric C S Tan 4, Liam P Shaw 5, Mislav Acman 4, François Balloux 6

PMID: 33239633 DOI: 10.1038/s41467-020-19818-2

**Abstract:** COVID-19 is caused by the coronavirus SARS-CoV-2, which jumped into the human population in late 2019 from a currently uncharacterised animal reservoir. Due to this recent association with humans, SARS-CoV-2 may not yet be fully adapted to its human host. This has led to speculations that SARS-CoV-2 may be evolving towards higher transmissibility. The most plausible mutations under putative natural selection are those which have emerged repeatedly and independently (homoplasies). Here, we formally test whether any homoplasies observed in SARS-CoV-2 to date are significantly associated with increased viral transmission. To do so, we develop a phylogenetic index to quantify the relative number of descendants in sister clades with and without a specific allele. We apply this index to a curated set of recurrent mutations identified within a dataset of 46,723 SARS-CoV-2 genomes isolated from patients worldwide. We do not identify a single recurrent mutation in this set convincingly associated with increased viral transmission. Instead, recurrent mutations currently in circulation appear to be evolutionary neutral and primarily induced by the human immune system via RNA editing, rather than being signatures of adaptation. At this stage we find no evidence for significantly more transmissible lineages of SARS-CoV-2 due to recurrent mutations.

Trends Endocrinol Metab. 2020 Nov 9;S1043-2760(20)30222-8. doi: 10.1016/j.tem.2020.11.004.

### [Sex and COVID-19: A Protective Role for Reproductive Steroids](#)

Graziano Pinna 1

PMID: 33229187 PMCID: PMC7649655 DOI: 10.1016/j.tem.2020.11.004

**Abstract:** Evidence shows coronavirus disease 2019 (COVID-19)-induced symptom severity and mortality is more frequent in men than in women, suggesting sex steroids may play a protective role. Female reproductive steroids, estrogen and progesterone, and its metabolite allopregnanolone, are anti-inflammatory, reshape competence of immune cells, stimulate antibody production, and promote proliferation and repair of respiratory epithelial cells, suggesting they may protect against COVID-19 symptoms.

Keywords: COVID-19; allopregnanolone; estrogens; immune system; inflammation; progesterone.



### *I giusti*

Un uomo che coltiva il suo giardino, come voleva Voltaire.  
Chi è contento che sulla terra esista la musica.  
Chi scopre con piacere un'etimologia.  
Due impiegati che in un caffè del Sur giocano in silenzio agli scacchi.  
Il ceramista che premedita un colore e una forma.  
Il tipografo che compone bene questa pagina, che forse non gli piace.  
Una donna e un uomo che leggono le terzine finali di un certo canto.  
Chi accarezza un animale addormentato.  
Chi giustifica o vuole giustificare un male che gli hanno fatto.  
Chi è contento che sulla terra ci sia Stevenson.  
Chi preferisce che abbiano ragione gli altri.  
Queste persone, che si ignorano, stanno salvando il mondo.

JORGE LUIS BORGES, *La cifra*, 1981.



