

# COVID-19

Jun 01-10, 2020



## RESEARCH PUBLICATIONS

**Publication Date: June 9, 2020**

### Recommendations for the prevention and treatment of the novel coronavirus pneumonia in the elderly in China

#### **Abstract**

The population is commonly susceptible to the 2019 novel coronavirus (2019-nCoV), especially the elderly with comorbidities. Elderly patients infected with 2019-nCoV tend to have higher rates of severe illness and mortality. Immunosenescence is an important cause of severe novel coronavirus pneumonia (NCP) in the elderly. Due to the combination of underlying diseases, elderly patients may exhibit atypical manifestations in clinical symptoms, supplementary examinations, and pulmonary imaging, deserving particular attention. The general condition of the elderly should be considered during diagnosis and treatment. In addition to routine care and measures—such as oxygen therapy, antiviral therapy, and respiratory support—treatment of underlying disease, nutritional support, sputum expectoration complication prevention, and psychological support should also be considered for elderly patients. Based on a literature review and expert panel discussion, we drafted the "Recommendations for the Prevention and Treatment of the Novel Coronavirus Pneumonia in the elderly in China," aiming to provide help with the prevention and treatment of NCP and the reduction of harm to the elderly population.

#### **Reference**

Chen, Q., Wang, L., Yu, W., Xi, H., Zhang, Q., Chen, X., Huang, K., Lu, X., Liu, X., Zhang, C., Wang, J. "Recommendations for the prevention and treatment of the novel coronavirus pneumonia in the elderly in China." *Aging Medicine* (2020) (IF = 1.03).

**Expansion of myeloid-derived suppressor cells in patients with severe coronavirus disease (COVID-19)**

**Abstract**

SARS-CoV-2 is associated with a 3.4% mortality rate in patients with severe disease. The pathogenesis of severe cases remains unknown. We performed an in-depth prospective analysis of immune and inflammation markers in two patients with severe COVID-19 disease from presentation to convalescence. Peripheral blood from 18 SARS-CoV-2-infected patients, 9 with severe and 9 with mild COVID-19 disease, was obtained at admission and analyzed for T-cell activation profile, myeloid-derived suppressor cells (MDSCs) and cytokine profiles. MDSC functionality was tested in vitro. In four severe and in four mild patients, a longitudinal analysis was performed daily from the day of admission to the early convalescent phase. Early after admission severe patients showed neutrophilia, lymphopenia, increase in effector T cells, a persisting higher expression of CD95 on T cells, higher serum concentration of IL-6 and TGF- $\beta$ , and a cytotoxic profile of NK and T cells compared with mild patients, suggesting a highly engaged immune response. Massive expansion of MDSCs was observed, up to 90% of total circulating mononuclear cells in patients with severe disease, and up to 25% in the patients with mild disease; the frequency decreasing with recovery. MDSCs suppressed T-cell functions, dampening excessive immune response. MDSCs decline at convalescent phase was associated to a reduction in TGF- $\beta$  and to an increase of inflammatory cytokines in plasma samples. Substantial expansion of suppressor cells is seen in patients with severe COVID-19. Further studies are required to define their roles in reducing the excessive activation/inflammation, protection, influencing disease progression, potential to serve as biomarkers of disease severity, and new targets for immune and host-directed therapeutic approaches.

**Reference**

Agrati, C., Sacchi, A., Bordoni, V. *et al.* Expansion of myeloid-derived suppressor cells in patients with severe coronavirus disease (COVID-19). *Cell Death and Differentiation* (2020) (IF 8.086).

## A single-cell atlas of the peripheral immune response in patients with severe COVID-19

### **Abstract**

There is an urgent need to better understand the pathophysiology of Coronavirus disease 2019 (COVID-19), the global pandemic caused by SARS-CoV-2, which has infected more than three million people worldwide. Approximately 20% of patients with COVID-19 develop severe disease and 5% of patients require intensive care. Severe disease has been associated with changes in peripheral immune activity, including increased levels of pro-inflammatory cytokines that may be produced by a subset of inflammatory monocytes, lymphopenia and T cell exhaustion. To elucidate pathways in peripheral immune cells that might lead to immunopathology or protective immunity in severe COVID-19, we applied single-cell RNA sequencing (scRNA-seq) to profile peripheral blood mononuclear cells (PBMCs) from seven patients hospitalized for COVID-19, four of whom had acute respiratory distress syndrome, and six healthy controls. We identify reconfiguration of peripheral immune cell phenotype in COVID-19, including a heterogeneous interferon-stimulated gene signature, HLA class II downregulation and a developing neutrophil population that appears closely related to plasmablasts appearing in patients with acute respiratory failure requiring mechanical ventilation. Importantly, we found that peripheral monocytes and lymphocytes do not express substantial amounts of pro-inflammatory cytokines. Collectively, we provide a cell atlas of the peripheral immune response to severe COVID-19.

### **Reference**

Wilk, Aaron J., Arjun Rustagi, Nancy Q. Zhao, Jonasel Roque, Giovanni J. Martinez-Colon, Julia L. McKechnie, Geoffrey T. Ivison et al. "A single-cell atlas of the peripheral immune response to severe COVID-19." *Med Rxiv* (2020) (IF= 30.641).

## Family Therapy and COVID-19: International Reflections during the Pandemic from Systemic Therapists across the Globe

### **Abstract**

The COVID-19 pandemic has convulsed human communities across the globe like no previous event in history. Family therapists, paradoxically, given the core of their work is with systems, are also experiencing upheaval in professional and personal lives, trying to work amidst a society in chaos. This paper offers a collection of reflections by systemic and family therapists from diverse cultures and contexts penned in the midst of the pandemic. The main intention in distilling these narratives is to preserve the 'cultural diversity' and 'ecological position' of the contributors, guided by phenomenology, cultural ecology, and systemic worldviews of 'experiencing.' The second intention is to 'unite' promoting solidarity in this isolating situation by bringing each story together, creating its own metaphor of a family: united, connected, stronger. As a cross-cultural family practitioner, with a strong mission for collaboration, the lead author acknowledges the importance of Context – the nation and location of the experience; Culture – the manner in which culture impacts on experience; Collaboration – enhancing partnership, enriching knowledge, and mapping the journey's direction; and Connectedness – combating isolation while enhancing unity. Since the key transmission of culture is through language, raw reflections were sought initially in the practitioners' own language, which were translated for an English-speaking readership. These narratives are honest and rich descriptions of the authors' lived experiences, diverse and distinctive. The contributors trust colleagues will find these reflections helpful, validating and acknowledging the challenges of this unique period in history.

### **Reference**

Amorin-Woods, D., Fraenkel, P., Mosconi, A., Nisse, M., Munoz, S. " Family Therapy and COVID-19: International Reflections during the Pandemic from Systemic Therapists across the Globe." *Aust. N. Z. J. Fam. Ther.* (2020) (IF 0.575).

**Seroprevalence of immunoglobulin M and G antibodies against SARS-CoV-2 in China**

**Abstract**

Detection of asymptomatic or subclinical novel human coronavirus SARS-CoV-2 infection is critical for understanding the overall prevalence and infection potential of COVID-19. To estimate the cumulative prevalence of SARS-CoV-2 infection in China, we evaluated the host serologic response, measured by the levels of immunoglobulins M and G in 17,368 individuals, in the city of Wuhan, the epicenter of the COVID-19 pandemic in China, and geographic regions in the country, during the period from 9 March 2020 to 10 April 2020. In our cohorts, the seropositivity in Wuhan varied between 3.2% and 3.8% in different subcohorts. Seropositivity progressively decreased in other cities as the distance to the epicenter increased. Patients who visited a hospital for maintenance hemodialysis and healthcare workers also had a higher seroprevalence of 3.3% (51 of 1,542, 2.5–4.3%, 95% confidence interval (CI)) and 1.8% (81 of 4,384, 1.5–2.3%, 95% CI), respectively. More studies are needed to determine whether these results are generalizable to other populations and geographic locations, as well as to determine at what rate seroprevalence is increasing with the progress of the COVID-19 pandemic. Serologic surveillance has the potential to provide a more faithful cumulative viral attack rate for the first season of this novel SARS-CoV-2 infection.

**Reference**

Xu, X., Sun, J., Nie, S. *et al.* Seroprevalence of immunoglobulin M and G antibodies against SARS-CoV-2 in China. *Nature Medicine* (2020) (IF 30.641).

## Rheumatic diseases during pregnancy and SARS-CoV-2: An appeal for medication adherence

### **Abstract**

The coronavirus disease 2019 (COVID-19) pandemic, caused by a novel coronavirus (SARS-CoV-2), has raised concerns among physicians and their patients with rheumatic diseases (RDs) as the risk of infection was believed to be increased due to altered immune system activity that is typical of RDs and possibly worsened by glucocorticoids and immunosuppressive drugs. An appeal for adherence to therapy was shared among rheumatologists, but special attention should be paid to pregnant women who suffer from RDs.

### **Reference**

Scioscia, Marco, Emanuela Praino, and Crescenzo Scioscia. "Rheumatic diseases during pregnancy and SARS-CoV-2: An appeal for medication adherence." *International Journal of Gynecology and Obstetrics* (2020) (IF 1.67).

## Effects of non-pharmaceutical interventions on COVID-19 cases, deaths, and demand for hospital services in the UK: a modelling study

### **Abstract**

Background: Non-pharmaceutical interventions have been implemented to reduce transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the UK. Projecting the size of an unmitigated epidemic and the potential effect of different control measures has been crucial to support evidence-based policy making during the early stages of the epidemic. This study assesses the potential impact of different control measures for mitigating the burden of COVID-19 in the UK.

Methods: We used a stochastic age-structured transmission model to explore a range of intervention scenarios, tracking 66.4 million people aggregated to 186 county-level administrative units in England, Wales, Scotland, and Northern Ireland. The four base interventions modelled were school closures, physical distancing, shielding of people aged 70 years or older, and self-isolation of symptomatic cases. We also modelled the combination of these interventions, as well as a programme of intensive interventions with

phased lockdown-type restrictions that substantially limited contacts outside of the home for repeated periods. We simulated different triggers for the introduction of interventions, and estimated the impact of varying adherence to interventions across counties. For each scenario, we projected estimated new cases over time, patients requiring inpatient and critical care (i.e., admission to the intensive care units [ICU]) treatment, and deaths, and compared the effect of each intervention on the basic reproduction number,  $R_0$ .

*Findings:* We projected a median unmitigated burden of 23 million (95% prediction interval 13–30) clinical cases and 350 000 deaths (170 000–480 000) due to COVID-19 in the UK by December, 2021. We found that the four base interventions were each likely to decrease  $R_0$ , but not sufficiently to prevent ICU demand from exceeding health service capacity. The combined intervention was more effective at reducing  $R_0$ , but only lockdown periods were sufficient to bring  $R_0$  near or below 1; the most stringent lockdown scenario resulted in a projected 120 000 cases (46 000–700 000) and 50 000 deaths (9300–160 000). Intensive interventions with lockdown periods would need to be in place for a large proportion of the coming year to prevent health-care demand exceeding availability.

*Interpretation:* The characteristics of SARS-CoV-2 mean that extreme measures are probably required to bring the epidemic under control and to prevent very large numbers of deaths and an excess of demand on hospital beds, especially those in ICUs.

## Reference

Davies, Nicholas G., Adam J. Kucharski, Rosalind M. Eggo, Amy Gimma, W. John Edmunds, Thibaut Jombart, Kathleen O'Reilly et al. "Effects of non-pharmaceutical interventions on COVID-19 cases, deaths, and demand for hospital services in the UK: a modelling study." *The Lancet Public Health* (2020) (IF 11.6).

## **Management of primary hepatic malignancies during the COVID-19 pandemic: recommendations for risk mitigation from a multidisciplinary perspective**

### Abstract

Around the world, recommendations for cancer treatment are being adapted in real time in response to the pandemic of COVID-19. We, as a multidisciplinary team, reviewed the standard management options, according to the Barcelona Clinic Liver Cancer

classification system, for hepatocellular carcinoma. We propose treatment recommendations related to COVID-19 for the different stages of hepatocellular carcinoma (ie, 0, A, B, and C), specifically in relation to surgery, locoregional therapies, and systemic therapy. We suggest potential strategies to modify risk during the pandemic and aid multidisciplinary treatment decision making. We also review the multidisciplinary management of intrahepatic cholangiocarcinoma as a potentially curable and incurable diagnosis in the setting of COVID-19.

## Reference

Barry, Aisling, Smith Apisarnthanarax, Grainne M. O'Kane, Gonzalo Sapisochin, Robert Beecroft, Riad Salem, Sang Min Yoon et al. "Management of primary hepatic malignancies during the COVID-19 pandemic: recommendations for risk mitigation from a multidisciplinary perspective." *The Lancet Gastroenterology and Hepatology* (2020) (IF 12.856).

**Publication Date: June 03, 2020**

## The impact of ethnicity on clinical outcomes in COVID-19: A systematic review

### Abstract

*Background:* The relationship between ethnicity and COVID-19 is uncertain. We performed a systematic review to assess whether ethnicity has been reported in patients with COVID-19 and its relation to clinical outcomes.

*Methods:* We searched EMBASE, MEDLINE, Cochrane Library and PROSPERO for English-language citations on ethnicity and COVID-19 (1st December 2019-15th May 2020). We also reviewed: COVID-19 articles in NEJM, Lancet, BMJ, JAMA, clinical trial protocols, grey literature, surveillance data and preprint articles on COVID-19 in MedRxiv to evaluate if the association between ethnicity and clinical outcomes were reported and what they showed.

*Findings:* Of 207 articles in the database search, five reported ethnicity; two reported no association between ethnicity and mortality. Of 690 articles identified from medical journals, 12 reported ethnicity; three reported no association between ethnicity and mortality. Of 209 preprints, 34 reported ethnicity – 13 found Black, Asian and Minority

Ethnic (BAME) individuals had an increased risk of infection with SARS-CoV-2 and 12 reported worse clinical outcomes, including ITU admission and mortality, in BAME patients compared to White patients. Of 12 grey literature reports, seven with original data reported poorer clinical outcomes in BAME groups compared to White groups.

*Interpretation:* Data on ethnicity in patients with COVID-19 in the published medical literature remains limited. However, emerging data from the grey literature and preprint articles suggest BAME individuals are at an increased risk of acquiring SARS-CoV-2 infection compared to White individuals and also worse clinical outcomes from COVID-19. Further work on the role of ethnicity in the current pandemic is of urgent public health importance.

## Reference

Pan, Daniel, Shirley Sze, Jatinder S. Minhas, Mansoor N. Bangash, Nilesh Pareek, Pip Divall, Caroline ML Williams et al. "The impact of ethnicity on clinical outcomes in COVID-19: A systematic review." *E Clinical Medicine* (2020): 100404.

**Publication Date: June 01, 2020**

## Coronavirus Disease 2019 (COVID-19): Role of Chest CT in Diagnosis and Management

### Abstract

*Objective:* The objective of our study was to determine the misdiagnosis rate of radiologists for coronavirus disease 2019 (COVID-19) and evaluate the performance of chest CT in the diagnosis and management of COVID-19. The CT features of COVID-19 are reported and compared with the CT features of other viruses to familiarize radiologists with possible CT patterns.

*Materials and Methods:* This study included the first 51 patients with a diagnosis of COVID-19 infection confirmed by nucleic acid testing (23 women and 28 men; age range, 26-83 years) and two patients with adenovirus (one woman and one man; ages, 58 and 66 years). We reviewed the clinical information, CT images, and corresponding image reports of these 53 patients. The CT images included images from 99 chest CT examinations, including initial and follow-up CT studies. We compared the image reports

of the initial CT study with the laboratory test results and identified CT patterns suggestive of viral infection.

Results: COVID-19 was misdiagnosed as a common infection at the initial CT study in two inpatients with underlying disease and COVID-19. Viral pneumonia was correctly diagnosed at the initial CT study in the remaining 49 patients with COVID-19 and two patients with adenovirus. These patients were isolated and obtained treatment. Ground-glass opacities (GGOs) and consolidation with or without vascular enlargement, interlobular septal thickening, and air bronchogram sign are common CT features of COVID-19. The reversed halo' sign and pulmonary nodules with a halo sign are uncommon CT features. The CT findings of COVID-19 overlap with the CT findings of adenovirus infection. There are differences as well as similarities in the CT features of COVID-19 compared with those of the severe acute respiratory syndrome.

Conclusion: We found that chest CT had a low rate of missed diagnosis of COVID-19 (3.9%, 2/51) and may be useful as a standard method for the rapid diagnosis of COVID-19 to optimize the management of patients. However, CT is still limited for identifying specific viruses and distinguishing between viruses.

## **Reference**

Li, Yan, and Liming Xia. "Coronavirus disease 2019 (COVID-19): role of chest CT in diagnosis and management." *American Journal of Roentgenology* 214, no. 6 (2020): 1280-1286 (IF 3.19).

## **Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis**

### **Abstract**

Background: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes COVID-19 and is spread person-to-person through close contact. We aimed to investigate the effects of physical distance, face masks, and eye protection on virus transmission in health-care and non-health-care (eg, community) settings.

Methods: We did a systematic review and meta-analysis to investigate the optimum distance for avoiding person-to-person virus transmission and to assess the use of face

masks and eye protection to prevent transmission of viruses. We obtained data for SARS-CoV-2 and the betacoronaviruses that cause severe acute respiratory syndrome, and Middle East respiratory syndrome from 21 standard WHO-specific and COVID-19-specific sources. We searched these data sources from database inception to May 3, 2020, with no restriction by language, for comparative studies and for contextual factors of acceptability, feasibility, resource use, and equity. We screened records, extracted data, and assessed risk of bias in duplicate. We did frequentist and Bayesian meta-analyses and random-effects metaregressions. We rated the certainty of evidence according to Cochrane methods and the GRADE approach. This study is registered with PROSPERO, CRD42020177047.

*Findings:* Our search identified 172 observational studies across 16 countries and six continents, with no randomised controlled trials and 44 relevant comparative studies in health-care and non-health-care settings (n=25697 patients). Transmission of viruses was lower with physical distancing of 1 m or more, compared with a distance of less than 1 m (n=10736, pooled adjusted odds ratio [aOR] 0.18, 95% CI 0.09 to 0.38; risk difference [RD] -10.2%, 95% CI -11.5 to -7.5; moderate certainty); protection was increased as distance was lengthened (change in relative risk [RR] 2.02 per m; pinteraction=0.041; moderate certainty). Face mask use could result in a large reduction in risk of infection (n=2647; aOR 0.15, 95% CI 0.07 to 0.34, RD -14.3%, -15.9 to -10.7; low certainty), with stronger associations with N95 or similar respirators compared with disposable surgical masks or similar (eg, reusable 12–16-layer cotton masks; pinteraction=0.090; posterior probability >95%, low certainty). Eye protection also was associated with less infection (n=3713; aOR 0.22, 95% CI 0.12 to 0.39, RD -10.6%, 95% CI -12.5 to -7.7; low certainty). Unadjusted studies and subgroup and sensitivity analyses showed similar findings.

*Interpretation:* The findings of this systematic review and meta-analysis support physical distancing of 1 m or more and provide quantitative estimates for models and contact tracing to inform policy. Optimum use of face masks, respirators, and eye protection in public and health-care settings should be informed by these findings and contextual factors. Robust randomised trials are needed to better inform the evidence for these interventions, but this systematic appraisal of currently best available evidence might inform interim guidance.

## Reference

Chu, Derek K., Elie A. Akl, Stephanie Duda, Karla Solo, Sally Yaacoub, Holger J. Schünemann, Amena El-harakeh et al. "Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis." *The Lancet* (2020) (IF 10.28).

## Self-risk assessment for patients with rheumatic disease during the COVID-19 pandemic

### Abstract

The COVID-19 pandemic is the biggest challenge faced by health services worldwide for over a century. As the deadly capability of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) became known, the UK Government and England's National Health Service (NHS) announced the need to identify individuals thought to be at an increased risk of developing severe manifestations of COVID-19, including patients receiving immunosuppressant therapies. The key aim was to advise susceptible individuals of the need to minimise their infection risk by following strict physical distancing or so-called shielding guidance. As a result, clinicians across the UK were challenged to identify and disseminate urgent information almost overnight to a targeted group of patients within the constraints of current NHS systems. Like our colleagues in Wolverhampton, we were acutely aware of the challenge created by the lack of accurate coding of rheumatological diagnosis and current medication within the Leeds Teaching Hospitals NHS Trust, prompting us to develop a multilayered strategy to communicate with our patients asking them to self-assess their COVID-19 risk.

After collating the information cascaded by regulatory authorities, the British Society for Rheumatology, and other medical societies, we created a series of guidance materials related to COVID-19 for rheumatology patients. We developed a patient-friendly self-risk assessment algorithm and presented it in an animated, home-recorded video using PowerPoint (Microsoft, Redmond, WA, USA), with all materials then uploaded onto the hospital website. Patients in the rheumatology department's outpatient waiting list were directed to this website via an SMS (text) message, which was sent to 10 612 patients, followed by a dispatch of 948 letters to those who could not access the message via SMS. Consent to be approached via SMS is recorded and renewed during routine outpatient

reviews in our NHS trust. The video was uploaded onto YouTube.com and shared via Twitter. As of May 7, 2020, 6 weeks into the UK lockdown, the Leeds risk stratification video had been viewed 5442 times, and 1568 patients have identified themselves as high risk by filling in a dedicated e-form on our website. Furthermore, the locally produced algorithm and video have been adopted or modified by rheumatology colleagues in other centres and patient charities in the UK and abroad.

We believe that self-stratification has other benefits for rheumatology patients, particularly when treatment might have changed since their last hospital visit. Our tool emphasises that patients should be aware of the importance of glucocorticoids as an infection risk, with 5 mg or more of prednisolone increasing the risk stratification at each line of therapy, and that patients should be particularly scrupulous in their implementation of physical distancing.<sup>6</sup> This therapy is often erroneously considered to be safer than disease-modifying antirheumatic drugs by both patients and non-specialist doctors. Conversely, both patients and physicians often misunderstand that reducing all immunosuppressant therapies would reduce infection risk, so we felt it was important to emphasise that reducing therapy might be counter-productive since untreated disease, or the treatments needed to control flares, could be more deleterious than stable non-glucocorticoid immunosuppressants. These considerations exemplify how guided self-management can lead to constructive patient education. The main limitation of this approach is the fact that susceptible patients, including older individuals, might have no access to modern technologies including the internet and smartphones, and might find themselves overwhelmed by the amount of information provided in paper form. Evaluation of the effect of the tool is difficult at present because we cannot assess what proportion of patients correctly identified themselves as high risk or whether this self-identification led to behavioural change; however, analysis to answer these questions is now underway.

This is the first time in its 70-year history that the capacity of response of the NHS has been tested to such a scale. We have been positively surprised by the flexibility and agility of the system to introduce drastic change rapidly. Additionally, in our experience, patient engagement was encouraging and prompt, with 1307 unique views of the video within the first 48 h of publishing. As the country enters the next phase of response, new ways of working should consider direct patient empowerment as a major catalyst for delivering safe and effective care.

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## Reference

Marzo-Ortega, Helena, Ai Lyn Tan, Lesley-Anne Bissell, Ann W. Morgan, Claire Vandeveld, Edward M. Vital, and Shouvik Dass. "Self-risk assessment for patients with rheumatic disease during the COVID-19 pandemic." *The Lancet Rheumatology* (2020).

## BOOKS

**Publication Date: June 2020**

### **The COVID-19 Catastrophe: What's Gone Wrong and How to Stop It Happening Again**

The global response to the Covid-19 pandemic is the greatest science policy failure in a generation. We knew this was coming. Warnings about the threat of a new pandemic have been made repeatedly since the 1980s and it was clear in January that a dangerous new virus was causing a devastating human tragedy in China. And yet the world ignored the warnings. Why?

In this short and hard-hitting book, Richard Horton, editor of the medical journal *The Lancet*, scrutinizes the actions that governments around the world took – and failed to take – as the virus spread from its origins in Wuhan to the global pandemic that it is today. He shows that many Western governments and their scientific advisors made assumptions about the virus and its lethality that turned out to be mistaken. Valuable time was lost while the virus spread unchecked, leaving health systems unprepared for the avalanche of infections that followed. Drawing on his own scientific and medical expertise, Horton outlines the measures that need to be put in place, at both national and international levels, to prevent this kind of catastrophe from happening again.

We're supposed to be living in an era where human beings have become the dominant influence on the environment, but Covid-19 has revealed the fragility of our societies and the speed with which our systems can come crashing down. We need to learn the lessons of this pandemic and we need to learn them fast because the next pandemic may arrive sooner than we think.

## **Reference**

[https://www.amazon.co.uk/dp/1509546464/ref=rdr\\_ext\\_tmb](https://www.amazon.co.uk/dp/1509546464/ref=rdr_ext_tmb)

# NEWSLETTERS

**Publication Date: June 09, 2020**

## **Three big studies dim hopes that hydroxychloroquine can treat or prevent COVID-19**

Hydroxychloroquine and chloroquine, well known anti-malarial drugs and other diseases, were thought to be repurposed as drugs for controlling SARS-CoV-2. Since, few evidences came from test tube data, hundreds of trials have been launched around the globe. Scientists were trying the drugs in low and high doses; alone or combined with other drugs on different patient, to study their efficacy against COVID-19. For more details, visit the link given below.

### **Reference**

<https://www.sciencemag.org/news/2020/06/three-big-studies-dim-hopes-hydroxychloroquine-can-treat-or-prevent-covid-19>

**Publication Date: June 05, 2020**

## **COVID-19 Research in Brief: 30 May to 5 June, 2020**

Nature Medicine summarizes all the research you need to know this week to keep on top of how science is responding to the COVID-19 pandemic. It includes results of current clinical trials for plasma therapy against COVID-19 (by Ling Li), and randomized, double-blind, placebo-controlled trial of prophylactic hydroxychloroquine treatment in multiple centers of USA and Canada. It also addresses dozens of researchers to question the provenance and validity of its data as well as the analytical techniques used, based on the expression of concern about retraction of Mehra co-workers' article from *The Lancet* on hydroxychloroquine and chloroquine treatment of COVID-19. It also highlighted the efficacy of different face masks in reducing SARS-CoV-2 transmission. For more details, visit the link given below.

## Reference

<https://www.nature.com/articles/d41591-020-00023-z>

### VirusDisease Special Issue on COVID-19 (April – June, 2020): “The Global Emergence of Coronavirus in Human”

SARS-CoV-2 has emerged in China and soon spread all over the world killing >1.9 lakh people. At present, the fear of CoV-2 looms everywhere resulting locked down in human society. The studies on such a contagious and lethal virus exploding in search of suitable measure to protect human life. We have planned a special issue of ‘VirusDisease’ on “The Global Emergence of Coronavirus in Human”, which will be published by June 2020. Original article, review, mini review and commentary are invited for this special issue. Some of the suggested areas: vaccine development, mutation and immune system evasion, effect on body organs, viral load dynamic and disease progress, antiviral compounds, foods and bioactive compounds for viral immunity boosting, virus in sputum and sputum on inert surface, asymptomatic carrier, animal to human and human to human transmission, coronavirus in pets and transmission to human, environmental factors in covid-19, temperature and viral stability, rapid diagnosis, country or state experience of covid-19 or any other topics.

## Reference

<https://www.springer.com/journal/13337/updates/17925176>

**Publication Date: June 04, 2020**

**Autoimmune and inflammatory diseases following COVID-19**

**Abstract**

Emerging reports show that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection precedes the appearance of various autoimmune and autoinflammatory diseases, including paediatric inflammatory multisystemic syndrome (PIMS) or multisystem inflammatory syndrome in children (MIS-C), thus adding to the growing mystery of this virus and raising questions about the nature of its link with autoimmune and autoinflammatory sequelae.

**Reference**

<https://www.nature.com/articles/s41584-020-0448-7>

**Why coronavirus hits men harder: Sex hormones offer clues**

Data from all around the world showed that men face a greater risk of severe illness and death from COVID-19 than women. Recent studies showed that androgens (male hormones, such as testosterone) regulate key genes and appear to boost the virus' ability to get inside cells and cause infection. Other reports revealed that male pattern baldness is overrepresented among hospitalized COVID-19 male patients. For further details, follow the link given below.

**Reference**

<https://www.sciencemag.org/news/2020/06/why-coronavirus-hits-men-harder-sex-hormones-offer-clues>

# COMMENTS

**Publication Date: June 8, 2020**

## Pathologists in pursuit of the COVID-19 culprit

### **Abstract**

The COVID-19 pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has resulted in more than 5.7 million confirmed cases and 350 000 deaths globally as of May 28, according to the Johns Hopkins University Coronavirus Resource Center. Despite the vast number of reports on the epidemiology, immunology, radiology, and management of COVID-19, few publications on the disease's pathology have so far been available, and most have been single-case reports or small case series. This report showed angiotensin-converting enzyme 2 (ACE2) acts as a functional receptor for SARS-CoV-2, and allowed the entry of virus into host cells. It also revealed that levels of circulating ACE2 are higher in men than in women, which might account for the differences in severity and mortality between sexes. It also highlighted that the prevalence and intensity of endothelial necrosis, increased megakaryocytes in alveolar capillaries, and widespread arteriolar fibrin–platelet thrombi are far more pronounced in cases of COVID-19 than in typical cases. Thus, anticoagulation might be used as an important therapeutic strategy. For further details, follow the link given below.

### **Reference**

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30449-7/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30449-7/fulltext)

**Population serology for SARS-CoV-2 is essential to regional and global preparedness**

**Abstract**

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19, poses a tremendous threat to human health. There were more than 4 million confirmed cases and 300 000 reported deaths worldwide as of May 11, 2020. There have been warnings of a major coronavirus pandemic since the SARS outbreak in 2002–04, and in 2020 that threat has been realised. Although there are challenges ahead, but the current prevalence, the incidence of asymptomatic infections, and the true mortality remains unclear. To and colleagues' study showed that the current level of immunity is far below the herd immunity threshold and will not appreciably slow future spread, so testing, screening, and contact tracing from symptomatic and asymptomatic infections are still key to stopping further infections. Therefore, it is also needed to ascertain the probable effectiveness of current control measures so future strategies can be prioritised accordingly. For further details, follow the link given below.

**Reference**

[https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247\(20\)30055-0/fulltext](https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30055-0/fulltext)

**Publication Date: June 2, 2020**

**An integrated national scale SARS-CoV-2 genomic surveillance network**

The Coronavirus Disease 2019 (COVID-19) Genomics UK Consortium (COG-UK) was launched in March, 2020, with £20 million support from UK Research and Innovation, the UK Department of Health and Social Care, and Wellcome Trust. The goal of this consortium is to sequence severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) for up to 230 000 patients, health-care workers, and other essential workers in the UK with COVID-19, which will help to enable the tracking of SARS-CoV-2 transmission, identify viral mutations, and integrate with health data to assess how the viral genome interacts with cofactors and consequences of COVID-19. Results from this initiative are guiding decision makers, including the weekly reports to the UK Scientific Advisory Group for Emergencies (SAGE). This initiative is the first time that large-scale genomic epidemiology has been used to guide and inform the public health response to a pandemic in the UK, setting the stage for genomics to serve as a core tool for outbreak tracking in future pandemics. For further details, follow the link given below.

**Reference**

[https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247\(20\)30054-9/fulltext](https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30054-9/fulltext)

# COMMENTARY

**Publication Date: June 02, 2020**

## Endpoints used in phase III randomized controlled trials of treatment options for COVID-19

Studies to identify potential drugs effective in treating the coronavirus disease 2019 (COVID-19) are currently ongoing at a rapid pace, although no drug has yet shown improved mortality outcomes in a randomized clinical trial (RCT). Whether the ongoing RCTs are using endpoints that matter remains unknown. Summary of the endpoints used in the actively recruiting phase III RCTs for the treatment of COVID-19 is provided herein.

Recently, concerns have been raised about relaxing approval standards at the time of pandemic. These analyses showed that most trials tested new treatment options for SARS-CoV-2 include a surrogate measure, which may or may not predict clinical benefit. Further these findings suggested that, for most drugs, even after the trial is complete there would continue to be uncertainty in the beneficial effects of the drug due to the use of an endpoint that does not reflect clinical benefit. For further details, follow the link given below.

### **Reference**

[https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370\(20\)30147-4/fulltext](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(20)30147-4/fulltext)

# EDITORIAL

**Publication Date: June 8, 2020**

## Technology in the COVID-19 era: Pushing the boundaries

### **Abstract**

In the continued absence of a vaccine or cure, efforts to contain the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have focused mainly on establishing public health and social measures, such as frequent hand hygiene, physical distancing, and travel restrictions. Given the pressure to restart economies, governments worldwide have been racing to find ways to ease lockdown restrictions without putting public safety and the most vulnerable at risk, including people with diabetes.

One solution that several countries are relying on, but which so far only a few have adopted, is the use of contact-tracing apps, such as TraceTogether (Singapore), COVIDSafe (Australia), and AarogyaSetu (India). Contact tracing can help to control the transmission of the virus by alerting people, who might have been exposed to it so they can self-isolate. Central to the introduction of these apps is the issue of privacy and data protection, hence the use of the Bluetooth technology, rather than Global Positioning System data, to prevent location tracking. However, with the urgent need to introduce new technology during a pandemic, it can be easy to overlook some of the potential pitfalls associated. For further details, follow the link given below.

### **Reference**

[https://www.thelancet.com/journals/landia/article/PIIS2213-8587\(20\)30191-1/fulltext](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(20)30191-1/fulltext)

# REPORT

**Publication Date: June 8, 2020**

## Genomic surveillance reveals multiple introductions of SARS-CoV-2 into Northern California

### **Abstract**

The COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 has spread globally, with >52,000 cases in California as of May 4, 2020. Here we investigate the genomic epidemiology of SARS-CoV-2 in Northern California from late January to mid-March 2020, using samples from 36 patients spanning 9 counties and the Grand Princess cruise ship. Phylogenetic analyses revealed the cryptic introduction of at least 7 different SARS-CoV-2 lineages into California, including epidemic WA1 strains associated with Washington State, with lack of a predominant lineage and limited transmission between communities. Lineages associated with outbreak clusters in 2 counties were defined by a single base substitution in the viral genome. These findings support contact tracing, social distancing, and travel restrictions to contain SARS-CoV-2 spread in California and other states.

### **Reference**

<https://science.sciencemag.org/content/early/2020/06/05/science.abb9263>