CLINICAL PRESENTATION AND MANAGEMENT

Risk of COVID-19-related death among patients with chronic obstructive pulmonary disease or asthma prescribed inhaled corticosteroids: an observational cohort study using the OpenSAFELY platform

This study assessed the relationship between COVID-19-related deaths and inhaled corticosteroid (ICS) use among 148,557 individuals with chronic obstructive pulmonary disease (COPD) and 818,490 individuals with asthma in England. ICS use was found to be associated with increased risk of COVID-19-related death among COPD patients compared to patients prescribed long-acting β agonist and long-acting muscarinic antagonist (LABA-LAMA) combinations (HR 1.39 [95% CI 1.10-1.76]). Among asthma patients, high-dose ICS prescriptions were associated with higher risk for COVID-19-related death compared to prescriptions of short-acting β agonists (SABA, HR 1.55 [95% CI 1.10-2.18]). A statistically significant difference in COVID-19-related death risk was not ascertained between use of low or medium dose ICS and SABA. Differences in disease severity across treatment groups may explain these findings, therefore the results do not indicate either a harmful or beneficial effect of ICS use on risk of COVID-19-related death.

NON-PHARMACEUTICAL/PUBLIC HEALTH INTERVENTIONS

Web and phone-based COVID-19 syndromic surveillance in Canada: a cross-sectional study

This cross-sectional study utilized data from two nationwide web-based surveys and phone polling in Ontario between March-April 2020. Across Canada, 1.6% of respondents reported experiencing symptoms on the day of their survey, while 44% said they had symptoms in the previous month. Among all respondents reporting symptoms, 2-9% reported SARS-CoV-2 testing. The positive test rate differed between surveys and ranged between 17-27%, for those who were symptomatic and had been tested. One survey showed increased symptom reporting among Indigenous/First Nations compared to those without this background (49.3% vs. 42.9%, p=0.04). Women were also found to report symptoms more often than men in two surveys. Authors call for expansion of testing in Canada and refined outreach and testing strategies towards groups with higher symptom prevalence.
NON-CLINICAL TRENDS

The Global Health Security Index is not predictive of coronavirus pandemic responses among Organization for Economic Cooperation and Development countries

Abbey et al. performed a comparison between Global Health Security Index (GHS) pandemic preparedness scores and current COVID-19 responses of 36 OECD countries. Statistical analysis through STATA using a multi-criterion ranking system was performed, comparing GHS index rankings and variables of interest (cases/million, deaths/million, recovery rate, tests/thousand). Results show a negative correlation between the two ($r_s=-0.41, p=0.013$), underlining the inability of the GHS index to predict COVID-19 response of, and impact on, countries. This was most clearly seen through the US and the UK, who were ranked 1st and 2nd respectively on the GHS index but ranked 32nd and 35th in the analysis. Countries with successful responses to COVID-19 include New Zealand and Australia, who had government-driven rapid responses, and Asian countries, who had previous experience following the outbreaks of SARS in 2003 and MERS in 2015. This indicated that the GHS index may be unreliable, leading the authors to suggest frequent reassessment of it to include leadership effect and country’s response to prior health threats.

The unequal impact of the coronavirus pandemic: Evidence from seventeen developing countries

Bottan et al. evaluated the economic impacts of the COVID-19 pandemic on 230540 respondents across income distributions of 17 countries in Latin America and the Caribbean through a large-scale online household survey administered from March 27, 2020 to April 30, 2020. 45% of all respondents report a job loss in the household, while 71% of respondents from households of the lowest income stratification experienced a job loss. Among households owning small businesses, 59% reported business closure; this increased to 61% when focusing on households of the lowest income prior to the pandemic. Many of the countries reported higher rates of business closure than that of the US, suggesting that developing countries have been more economically impacted by the pandemic, potentially due to high levels of informal and self-employed workers. Negative economic impacts from the pandemic have been concentrated among pre-COVID-low-income households. The authors suggest two major explanations for this: (1) policies aiming to prevent virus spread (e.g. mobility-restriction, curfews) are more likely to affect informal workers and (2) lower income households may have a different ability to telework (work-from-home) than high-income households.
Non-communicable diseases and inequalities increase risk of death among COVID-19 patients in Mexico

This study aims to understand the existing challenges of high non-communicable disease prevalence and social inequity in relation to the risk of death in COVID-19 patients in Mexico. Public data from the Directorate General of Epidemiology was obtained for individuals who tested positive for SARS-CoV-2 in Mexico. Overall, it was found that the odds of hospitalization were 2.82 times greater for individuals with obesity, diabetes, and hypertension compared to those with no conditions. Individuals with obesity, diabetes, and hypertension also had an increased odds ratio (OR 1.34) of being intubated compared to those with no conditions. Additionally, the probability of dying from COVID-19 was 2.48 times higher for individuals with obesity, diabetes, and hypertension compared to this without any conditions. Overall, COVID-19 disproportionately affects people with non-communicable diseases in Mexico and the response to the pandemic must take these factors into account.

Barriers and facilitators of adherence to social distancing recommendations during COVID-19 among a large international sample of adults

In order to study factors related to adherence to social distancing, the authors took a convenience sample of 2013 adults across North America and Europe who completed a survey designed to measure socio-demographic characteristics and behaviours related to social distancing. Motivations to adhere to social distancing centred around wanting to protect others (86%), themselves (84%), and their community (84%). Reasons for lack of adherence to social distancing included higher population density (i.e. inability to distance on the streets) (31%), the need to take care of family (25%), mistrust in government messaging (13%), and feelings of isolation (13%). Men were less likely to adhere to social distancing compared to women, and younger people (18-24) were also less likely to follow social distancing. Recommendations to promote social distancing could include motivational interviewing and accessing personal values to encourage social distancing.

PHARMACEUTICAL INTERVENTIONS:
Effect of Hydroxychloroquine in Hospitalized Patients with Covid-19

The RECOVERY randomized controlled trial was conducted among patients hospitalized with Covid-19 across 176 hospitals in the UK, and compared the primary outcome of 280-day mortality between patients receiving the standard of care for Covid-19 and patients receiving hydroxychloroquine in addition to the usual standard of care. Hydroxychloroquine was given to 1561 patients while 3155 patients received the usual care. The authors found that 421 patients (27%) who took hydroxychloroquine died within 28 days and 790 patients (25%) in the usual care group died. Patients who took hydroxychloroquine were less likely to be discharged from the hospital within 28 days (59.6%) compared to people in the usual care group (62.9%). Overall, findings suggest that patients in the hydroxychloroquine group did not have a decreased incidence of death at 28 days compared to those receiving the usual standard of care.
**Detection of SARS-CoV-2 RNA by multiplex RT-qPCR**

At present, the quantitative reverse transcription PCR (RT-qPCR) assay suggested for SARS-CoV-2 testing requires analysis of two viral and one host genomic targets. Researchers created a multiplex RT-qPCR assay to detect SARS-CoV-2 in a single reaction in order to reduce the required reagents and simplify testing. They found that the cycle threshold of their multiplex RT-qPCR was similar to that of their single assay and low numbers of RNA (<500 copies/reaction) were similarly detected by their novel multiplex RT-qPCR. The multiplex RT-qPCR method was 100% sensitive compared with single RT-qPCR. These findings suggest that the multiplex RT-qPCR improves present diagnostics via reduced reagents, costs, times and workforce.

**MENTAL HEALTH**

**Prevalence, management, and outcomes of SARS-CoV-2 infections in older people and those with dementia in mental health wards in London, UK: a retrospective observational study**

This retrospective observational study collected data from inpatients over 65 years of age and individuals with young-onset dementia in five NHS-funded organisations providing mental health services (Trusts) in London between March 1 and April 30, 2020. The study utilized data on demographics, mental health clinical features, physical comorbidities, medications and treatments, and COVID-19 related symptoms and diagnosis details of individual participants; site-level data was also collected regarding inpatient facility COVID-19 management and timeline and collaboration between mental health and hospital staff. Of the 344 eligible patients from the Trusts, 38% were diagnosed with COVID-19 after being admitted to a psychiatric ward. Though symptomatic patients were identified in three of the five wards early in March, testing and PPE availability varied across Trusts, with delays amounting to 4-5 days for testing and 2-7 days for PPE. Trusts also varied in physician protocol, with three increasing direct contact with physicians for emergency COVID-19 management and two allowing increased virtual contact and consultation. New patients were tested for SARS-CoV-2, and once testing became widely available, 69% of symptomatic and asymptomatic patients and 63% of patients who had been previously diagnosed with COVID-19 were positive by way of PCR test. Most common symptoms observed were pyrexia and persistent cough, and common complications included increased D-dimer concentrations. Zero to five patients diagnosed with COVID-19 died in each of the Trusts. Of the patients who died, the mean age was 79, 63% had dementia, 53% were male, and all had comorbidities. Ethnicity was not found to be a determining factor of higher mortality within the specialty care setting. Overall, the authors’ findings highlighted the higher risk of infection in these facilities and suggest greater attention be paid to mental health settings during the pandemic.
MODELS

Effect of school closures on mortality from coronavirus disease 2019: old and new predictions

In order to reproduce the information available to policymakers in the United Kingdom when the lockdown decision was made in March 2020, researchers used independent calculations using the CovidSim code of 70 million simulated individuals in Great Britain and Northern Ireland to reinvestigate mitigation scenarios. The model predicted that school closures and isolation of young people would reduce the reproduction number of COVID-19 but unexpectedly increase total number of deaths, notwithstanding postponement to subsequent waves. The model confirmed that adding school and university closures to case isolation, household quarantine, and social distancing of individuals over 70 years of age would lead to more deaths compared with equivalent mitigation scenarios that refrained from closing schools and universities. In addition, social distancing was projected to reduce the number of cases but increase the total number of deaths compared with social distancing of individuals over 70 years only. The researchers note that in assessing the impact of school closures, UK policymakers have concentrated on reducing total number of cases and not the number of deaths, and none of the proposed mitigation strategies in the UK would reduce the predicted number of deaths below 200,000. This study supports existing research that without a vaccine, school closures would result in more overall deaths due to the skewed impact of COVID-19 on the elderly. Thus, there is more need to focus on shielding elderly and vulnerable, and current data is insufficient to accurately predict where localized spikes will occur.

REGION-SPECIFIC LESSONS LEARNED

Lockdown measures in response to COVID-19 in nine sub-Saharan African countries

Haider et al collected lockdown design and implementation data from Ghana, Nigeria, South Africawas Sierra Leone, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe during the COVID-19 pandemic. Data were collected by country-based researchers who used semi-structured questionnaires along with data from the WHO and the African Centres for Disease Control and Prevention websites. The study categorized lockdown in the context of three interventions: geographical containment, home confinement, and prohibition of gatherings and closure of establishments and premises. In all nine countries, the international passenger flights were suspended early in the epidemic and border crossings were restricted early on in the pandemic. In all countries other than Sierra Leone and Tanzania, non-essential businesses were closed. All countries closed down education centres and restricted gathering size. Other interventions included strict home confinement (practiced by South Africa and Uganda), as well as communicable disease control measures across the countries. Mitigation measures to support poor households and vulnerable populations were enforced in most countries. The analysis also highlights
potential harm associated with lockdown measures in lower-resourced settings where large groups of people are living in one home and affecting transmission rates. Additionally, conflict and violence arose as a result of lockdown measures, perhaps, negatively impacting health. Ultimately, the authors discussed the complexity around lockdown measures such as sociopolitical factors make country-specific contexts extremely variable.

**Stringent containment measures without complete city lockdown to achieve low incidence and mortality across two waves of COVID-19 in Hong Kong**

This study evaluated COVID-19 incidence and mortality in relation to containment measures present in Hong Kong between two waves of COVID-19. Stringent border control was correlated with a reduction in the reproduction number in the second (1.35 to 0.57) and third (0.92 to 0.18) waves. It was also correlated with reductions in infections averted in wave 2 (450 local infections averted) and in wave 3 (1650 local infections averted). Other findings included a surge in asymptomatic, imported cases correlated with testing for COVID-19 among people coming from overseas in the second wave, improved containment delay from the second to the third wave (average of 6.8 vs 3.7 days), and higher incidence among males. Implications from this study are that strong containment policies played a large role in successfully controlling the pandemic in Hong Kong.

**ADDITIONAL RESOURCES**
- UCSF Library COVID-19 Research and Information Resources
- UCSF Institute for Global Health Sciences COVID-19 Resources
- UC Davis One Health Institute COVID-19 FAQs
- Harvard Viswanath Lab Myths vs Facts

**Note on this Document:** This document was assembled by graduate and doctoral students attending the University of California, San Francisco with the intent of facilitating the rapid dissemination of information to the global community in order to help during this time. Sigal Maya, Shivali Joshi, Ilia Vasilopoulos, Carina Ashkar, Caihla Petiprin, and Alyssa Bercasio contributed to these summaries. This work is volunteer based.
References:


