CLINICAL PRESENTATION AND MANAGEMENT

Global Incidence of Neurological Manifestations Among Patients Hospitalized With COVID-19 – A Report for the GCS-NeuroCOVID Consortium and the ENERGY Consortium

This study used data from COVID-19 patients hospitalized at 28 centers, representing 13 countries and four continents, to describe and assess the incidence of neurological manifestations associated with a COVID-19 diagnosis. The study population was derived from three different cohorts: the GCS-NeuroCOVID all COVID-19 cohort (N=3055) included COVID-19 patients with and without neurological manifestations; the GCS-NeuroCOVID COVID-19 neurological cohort (N=475) included COVID-19 patients hospitalized in the US with neurological manifestations; and the ENERGY cohort (N=214) included hospitalized COVID-19 patients who received formal neurological consultation. Overall, 82% of the total study populations experienced any neurological manifestations. The most common self-reported neurological manifestation was headache, reported by 38%, 35%, and 27% of patients in these cohorts, respectively. This was followed by anosmia or ageusia which was reported by 26% of patients across all three cohorts. The most common clinically captured neurological sign was acute encephalopathy which was experienced by nearly half of all participants, followed by coma (17%), and stroke (3%). Patients with clinically captured neurological signs had dramatically higher odds for in-hospital death (aOR 5.99, 95% CI 4.33 – 8.28). Given the high incidence of neurological manifestations of COVID-19, further research is warranted to understand their mechanisms of action and long-term outcomes.

Predicting patients with false negative SARS-CoV-2 testing at hospital admission: A retrospective multi-centre study

Among COVID-19 tests conducted in hospital settings, 13% of tests are estimated have false negative results, which can contribute to nosocomial transmission. Ghazi et al developed a model to predict false negative test results, and the cohort included 31,459 patients at Yale-New Haven Health System who had a COVID-19 test within 96 hours of hospital admission. The multivariable logistic regression model was trained on a subsample of patients who were tested only once. Higher age, black race, lower initial oxygen saturation, higher initial temperature, and lower white blood cell count were the factors most strongly associated with a positive test result among the training cohort. Subsequently, this model was validated using a subsample of the cohort which initially tested negative but was retested within 96 hours of admission. Out of the 3,511 patients in this subsample who were retested, 61 (1.7%) were false negatives (testing positive this time). In an attempt to predict the false negatives in the validation cohort, the model had an area under the receiver-operator characteristic of 0.76 (95% CI 0.70-0.83). The model predicted that 536 patients in the validation cohort were false negatives, which included 35 out of the 61 (57%) actual false negatives—a step in the right direction in hospital retesting.
NON-CLINICAL TRENDS

**Prevalence and changes in food-related hardships by socioeconomic and demographic groups during the COVID-19 pandemic in the UK: A longitudinal panel study**

Authors used data from the longitudinal UK Understanding Society survey (latest wave between April-July 2020, N=11,104) to understand the effect of the pandemic on food insecurity. During the data collection period, reports of being unable to eat healthy and nutritious foods sharply increased from 3.2% of respondents in April to 16.3% in July. This was largely driven by increases among Asian people, self-employed people, those aged 34-55, and those with children under 15 in the household. There were also geographical discrepancies, with the largest increase in food-related hardship (19.4 percentage points) being reported by those living in Scotland. There was a smaller increase in reports of being hungry but not eating in the last week (from 3.3% in April to 5.1% in July), specifically among disadvantaged groups. Individuals who became unemployed during the pandemic had higher odds of going hungry in the last week compared to both those who have been furloughed (OR 2.2, p<0.05) and who have been persistently employed (OR 3.5, p<0.001). These findings suggest that the Coronavirus Job Retention scheme and equivalent programs have mitigated some exposure to food-related hardship; however, authors suggest specific pandemic response components addressing additional difficulties in food affordability and supply.

NON-PHARMACEUTICAL / PUBLIC HEALTH INTERVENTIONS

**A Media Intervention Applying Debunking Versus Non-Debunking Content to Combat Vaccine Misinformation in Elderly in the Netherlands: A Digital Randomised Trial**

Yousuf et al. performed a randomized parallel-group blinded study in the Netherlands to assess impact of an intervention video on vaccine hesitancy. Participants were recruited through a TV show targeted to elderly viewers between October 13 to 16, 2021 and were randomized between a video intervention and control. The two videos contained either social norms, vaccine information and debunking of vaccination myths (intervention group, n = 505), or only vaccine information and social norms (control group, n = 475). Follow-up surveys showed that the intervention group was more likely to reject vaccine myths as well as to believe in government mitigation measures. These findings suggest that media interventions are effective in combating misinformation and vaccine hesitancy.

**Assessment of Feasibility of Face Covering in School-Aged Children With Autism Spectrum Disorders and Attending-Deficit/Hyperactivity Disorder**

Aaronson et al. performed a cohort study examining face covering behavior among kids who participated in a treatment program at the University of Washington Autism Center during July 2020. Participants (n=104) aged 5-13 years old were supervised daily in groups of ten for 4 weeks during activities such as group discussions and board games. The children would receive points for good behavior and a mask-wearing bonus if they wore their mask correctly for a specified time interval. Eighty-six percent of the children wore a face covering at least 75% of the time. There was a significant association
between a child’s age and prevalence of mask wearing, with older children wearing masks correctly more often. The study showed that kids with autism spectrum disorder and/or attention-deficit/hyperactivity disorder correctly used face covering throughout group activities, suggesting that face covering can be used as an infection mitigation measure in pediatric settings.

PHARMACEUTICAL INTERVENTIONS

COVID-19 vaccine acceptance in California state prisons

Researchers at Stanford University evaluated the proportion of residents in California state prisons that accepted at least one dose of the Pfizer or Moderna COVID-19 vaccine. Between December 22, 2020 and March 4, 2021, anonymized data from state prison records was used to estimate the percentage of vaccine acceptance across different race, ethnicity, and age groups. 66.5% of those offered a vaccine accepted at least one dose. Acceptance, however, significantly varied by race: 72.6% of Hispanic residents, 72.1% of white residents, 66.7% of American Indian or Alaska Native and Asian or Pacific Islander residents accepted the dose, whereas only 54.9% of Black residents accepted the dose, with fewer than half of young black residents accepting the dose. The authors also note that of those who declined the vaccine, 45.9% of residents reoffered the vaccine accepted the offer, suggesting that with time and information, individuals can shift from vaccine skepticism to vaccine acceptance. However, the authors also emphasize that there is still much to be done to build trust with this community.

Immunogenicity of COVID-19 mRNA Vaccines in Pregnant and Lactating Women

Despite the increased risk of adverse health outcomes for pregnant women with COVID-19, phase three vaccine trials did not include pregnant or lactating women. Collier et al conducted an exploratory, prospective cohort study using a convenience sample to evaluate the immunogenicity of COVID-19 vaccines in this population. The study recruited 131 women pregnant, lactating, or nonpregnant women of whom 103 have received the Moderna or Pfizer-BioNTech vaccine and 28 have been previously infected with SARS-CoV-2. In pregnant, lactating, and non-pregnant women, humoral and cellular immune responses were clearly shown. Median RBD-IgG binding antibody titers were higher among those vaccinated than among those who had been previously infected. Binding and neutralizing antibodies were detected in infant cord blood and maternal breast milk, suggesting a transferal of protection from vaccinated mothers to newborns. Pregnant, lactating, and non-pregnant women who had been vaccinated exhibited both humoral and cellular immune responses to both B.1.1.7 and B.1.351 variants of concern, though the humoral response was markedly lower for the variants compared to the original virus. Overall, these results suggest that COVID-19 vaccine was immunogenic among pregnant and lactating women.

Public health impact of delaying second dose of BNT162b2 or mRNA-1273 covid-19 vaccine: simulation agent based modelling study

Romero-Brufau et al. evaluated the population effects of delaying the second dose of COVID-19 vaccines compared to the standard dosing schedule (21 or 28 days), with the goal to determine whether delaying second doses to give more individuals the first dose
results in more widespread immunity. The authors simulated a population of 100,000 and included family, occupational, and random networks that could result in encounters with COVID-19 positive individuals. When the vaccination rate was held constant at 0.3% and the vaccine efficacy estimates were varied, the authors determined that delaying the second dose was favorable only for vaccines with greater than 70% efficacy. Varying the vaccination rate while holding first dose efficacy at 80% revealed that delaying the second dose is favorable for vaccination rates below 0.3%. The authors also examined age-split dosing strategies and found that delaying the second dose for all individuals under 65 years was favorable, assuming 80% first dose vaccine efficacy and a vaccination rate of 1% or less. The authors suggest that, under certain conditions, delaying the second dose is favorable and that certain age-split dosing strategies can reduce absolute mortality between 26 and 47 per 100,000.

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
Accesocovid.com

Note on this Document: This document was assembled by undergraduate and doctoral students attending the University of California, Los Angeles and the University of California, San Francisco with the intent of facilitating the rapid dissemination of information to the global community. Masih Babagoli, Mariam Carson, Sara Covin, Sigal Maya, and Ilia Vasilopoulos and contributed to these summaries. This work is volunteer based.

References:


5 Yousuf H, Linden S Van Der, Bredius L, et al. A media intervention applying debunking versus non-debunking content to combat vaccine misinformation in
