2019-nCoV Literature Situation Report (Lit Rep)

January 11, 2021

The scientific literature on COVID-19 is rapidly evolving and these articles were selected for review based on their relevance to Washington State decision making around COVID-19 response efforts. Included in these Lit Reps are some manuscripts that have been made available online as pre-prints but have not yet undergone peer review. Please be aware of this when reviewing articles included in the Lit Reps.

Key Takeaways

- **Among collegiate athletes exposed to COVID-19 (n=1,830), one quarter had positive test results during quarantine with a mean of 3.8 days from quarantine start until the positive test result. More**
- **In the St. Louis region, 89,341 SARS-CoV-2 tests were conducted in 23 zip codes accounting for 50% of hospitalizations, and 17 of these zip codes had a population where >50% of residents were Black. In contrast, 218,057 tests were conducted in 86 zip codes accounting for only 25% of hospitalizations, none of which had a predominantly Black population. More**
- **A prospective, randomized, open-label trial concluded that renin–angiotensin system inhibitors, which are medications commonly used to treat hypertension, could safely be continued in patients hospitalized with COVID-19. More**
- **A rapid review and meta-analysis concluded that three quarters of COVID-19 patients received antibiotics, significantly higher than the prevalence of bacterial co-infection (8.6%). More**

Non-Pharmaceutical Interventions

- An analysis conducted by CDC with the National Collegiate Athletic Association found that among collegiate athletes exposed to COVID-19 (n=1,830), one quarter had positive test results during quarantine with a mean of 3.8 days from quarantine start until the positive test result. Among athletes who had not received a positive test result by day 5, the probability of testing positive decreased from 27% after day 5 to <5% after day 10. More athletes reported exposure to COVID-19 at social gatherings (40.7%) and from roommates (31.7%) than they did from exposures associated with athletic activities (12.7%). The authors concluded that shortening the quarantine period could increase adherence, but still poses a small transmission risk.

  Atherstone et al. (Jan 8, 2021). Time from Start of Quarantine to SARS-CoV-2 Positive Test Among Quarantined College and University Athletes — 17 States, June–October 2020. MMWR. Morbidity and Mortality Weekly Report. https://doi.org/10.15585/mmwr.mm7001a2

Transmission

- Very limited within-school transmission of SARS-CoV-2 was found in the first 9 weeks of in-person instruction in North Carolina secondary schools between August and October 2020. There were 773 community-acquired infections documented by molecular testing in the 11 school districts with over 90,000 students and staff. Through contact tracing, health department staff identified an additional 32 infections acquired within schools. No instances of child-to-adult transmission of SARS-CoV-2 were reported.

Zimmerman et al. (Jan 8, 2021). Incidence and Secondary Transmission of SARS-CoV-2 Infections in Schools. Pediatrics. https://doi.org/10.1542/peds.2020-048090

- An outbreak of SARS-CoV-2 among U-20 ice hockey teams in Finland was reported based on public statements by the local health authorities and the teams involved. One player who had asymptomatic COVID-19 infected 22 of 28 teammates. The team had returned from an away trip the day before the first players had symptoms. COVID-19 was detected in both teams a few days later. During two weeks of quarantine, a total of 24 players from the two opposing teams tested positive. Some of these players infected additional players on other teams. In total, 49 infections were detected in five ice hockey teams, and six teams were in quarantine for two weeks.

  Kuitunen et al. (Jan 11, 2021). Team-to-Team Transmission of COVID-19 in Ice Hockey Games - a Case Series of Players in Finnish Ice Hockey Leagues. Infectious Diseases. https://pubmed.ncbi.nlm.nih.gov/33423589/

Testing and Treatment

- A cross-sectional study using modified Lorenz curves to assess disparities in COVID-19 testing relative to disease burden found that in the St. Louis region, 89,341 SARS-CoV-2 tests (22.9%) were conducted in the 23 zip codes accounting for 50% of hospitalizations; 17 of these zip codes had a population where >50% of residents were Black. In contrast, 218,057 tests (52.9%) were conducted in the 86 zip codes accounting for only 25% of hospitalizations, none of which had a predominantly Black population. Within the same zip code, Black residents consistently had lower rates of tests per hospitalization compared with white residents.

  Mody et al. (Jan 8, 2021). Using Lorenz Curves to Measure Racial Inequities in COVID-19 Testing. JAMA Network Open. https://pubmed.ncbi.nlm.nih.gov/33416882/

- A prospective, randomized, open-label trial concluded that renin–angiotensin system inhibitors, which are commonly used to treat hypertension, could safely be continued in patients hospitalized with COVID-19. Between March 31 and August 20, 2020, 152 participants were randomly assigned to either continue or discontinue renin–angiotensin system inhibitor therapy. 16 (21%) participants in the continuation arm versus 14 (18%) in the discontinuation arm required intensive care unit admission or invasive mechanical ventilation, and 11 (15%) of 75 participants in the continuation arm versus 10 (13%) in the discontinuation arm died. 29 (39%) participants in the continuation arm and 28 (36%) participants in the discontinuation arm had at least one adverse event.

  Cohen et al. (Jan 7, 2021). Continuation versus Discontinuation of Renin–Angiotensin System Inhibitors in Patients Admitted to Hospital with COVID-19: A Prospective, Randomised, Open-Label Trial. The Lancet Respiratory Medicine. https://doi.org/10.1016/S2213-2600(20)30558-0

Clinical Characteristics and Health Care Setting

- A cohort study following patients recovering from COVID-19 in Wuhan, China found that fatigue or muscle weakness (63%) and sleep difficulties (26%) were the most commonly reported symptoms during the 6 months post-discharge. Anxiety or depression was reported among 23% of patients. In a comparison of laboratory values during the acute phase of illness versus at follow-up, seropositivity rates (96.2% vs 58.5%) and median neutralizing antibody titers (19.0 vs 10.0) were significantly lower at follow-up than during the acute phase of illness among 94 patients tested at follow-up.

  Huang et al. (Jan 11, 2021). 6-Month Consequences of COVID-19 in Patients Discharged from Hospital: A Cohort Study. The Lancet. https://doi.org/10.1016/S0140-6736(20)32656-8

- A prospective observational study of adults hospitalized with SARS-CoV-2 infection (n=121) detected persistent viral shedding (PVS) for at least 21 days in up to 38% of patients, which was strongly associated with immunosuppression (6.7% vs 21.7%), increased IL-6 levels (43.4% vs 67.3%), and need for mechanical ventilation (20.0% vs 41.3%). Time from onset of symptoms was also an independent factor associated with PVS in the multivariate analysis.

Vena et al. (Jan 8, 2021). Prevalence and Clinical Significance of Persistent Viral Shedding in Hospitalized Adult Patients with SARS-CoV-2 Infection: A Prospective Observational Study. Infectious Diseases and Therapy. https://doi.org/10.1007/s40121-020-00381-8

- A cross-sectional SARS-CoV-2 seroprevalence study in Louisiana found that reported loss of taste or smell was strongly associated with a positive (PCR or antibody) test (OR: 13.6). Among people who tested positive, 47.3% (147/311) were asymptomatic. Modeling the probability of symptoms showed that the highest probability of reporting symptoms was 64.6% at age 29, which declined to 49.3% at age 60 and only 25.1% at age 80.

  Feehan et al. (Jan 5, 2021). The Importance of Anosmia, Ageusia and Age in Community Presentation of Symptomatic and Asymptomatic SARS-CoV-2 Infection in Louisiana, USA; a Cross-Sectional Prevalence Study. Clinical Microbiology and Infection. https://doi.org/10.1016/j.cmi.2020.12.029

- A cross-sectional study of sailors on a navy aircraft carrier (n=1688, 87% male) found that current smoking status was associated with a lower risk of COVID-19 (OR = 0.59). 1279 (76%) crewmembers developed COVID-19 (62% RT-PCR positive, 14% with only clinical signs), and crewmembers >50 years old had an increased risk of contracting COVID-19 (OR = 2.84). The authors note that smoking should not be considered as efficient protection against the disease and further research is needed to understand the mechanism by which smokers may have lower risk of COVID-19.

  Paleiron et al. (Jan 9, 2021). Impact of Tobacco Smoking on the Risk of COVID-19. A Large Scale Retrospective Cohort Study. Nicotine & Tobacco Research. https://pubmed.ncbi.nlm.nih.gov/33420786/

Modeling and Prediction

- A mathematical model developed to quantify the probability of post-quarantine transmission in the context of travel found that SARS-CoV-2 testing on exit could reduce the duration of a 14-day quarantine by 50%, while testing on entry shortened quarantine by at most one day. The authors tested this approach in a real-world scenario involving offshore oil rig employees and found 47 positive cases were identified with testing on entry and exit to quarantine, among whom 16 had tested negative at entry, preventing an estimated nine transmission events.

  Wells et al. (Jan 7, 2021). Optimal COVID-19 Quarantine and Testing Strategies. Nature Communications. https://doi.org/10.1038/s41467-020-20742-8

Public Health Policy and Practice

- A rapid review and meta-analysis (n=154 studies, 30,623 patients) concluded that three quarters of patients with COVID-19 received antibiotics, which was significantly higher than the prevalence of bacterial co-infection (8.6% from 31 studies). Antibiotic prescribing was lower in children (prevalence OR = 0.10) compared to adults, and higher with increasing patient age (OR 1.45 per 10 year increase) and with increasing proportion of patients requiring mechanical ventilation (OR 1.33 per 10% increase).

  Langford et al. (Jan 4, 2021). Antibiotic Prescribing in Patients with COVID-19: Rapid Review and Meta-Analysis. Clinical Microbiology and Infection. https://pubmed.ncbi.nlm.nih.gov/33418017/

- A study evaluating the readability of websites with COVID-19-related information found reading levels were suitable for high school graduates or college students, which is higher than the recommended readability level. Search terms “coronavirus,” “COVID,” and “COVID-19” were input into Google, and the first thirty website results for each search term were evaluated. Most websites (87.2%) had not been officially certified using the Health On the Net Foundation code of conduct (HONcode). There were no significant differences in readability scores of websites with and without HONcode certification.

Valizadeh-Haghi et al. (Jan 7, 2021). Health Websites on COVID-19: Are They Readable and Credible Enough to Help Public Self-Care? Journal of the Medical Library Association. https://doi.org/10.5195/jmla.2021.1020

Other Resources and Commentaries

- Looking to the empirical literature on the potential for financial incentives to enhance adherence with COVID-19 vaccination – Preventive Medicine (Jan 8 2021)
- Establishment and lineage dynamics of the SARS-CoV-2 epidemic in the UK – Science (Jan 8 2021)
- On COVID-19, cognitive bias, and open access – Proceedings of the National Academy of Sciences (Jan 12 2021)
- What are SARS-CoV-2 genomes from the WHO Africa region member states telling us? – BMJ Global Health (Jan 8 2021)
- Long-term follow-up of recovered patients with COVID-19 – The Lancet (Jan 11 2021)
- A new year, but familiar challenges from COVID-19 in the USA – The Lancet Respiratory Medicine (Jan 11 2021)
- Commercial truck drivers should be a priority population for COVID-19 vaccinations – American Journal of Industrial Medicine (Jan 9 2021)
- Remdesivir for the treatment of COVID-19: A systematic review and meta-analysis of randomized controlled trials – Contemporary Clinical Trials (Jan 7 2021)
- Search for better COVID vaccines confounded by existing rollouts – Nature (Jan 8 2021)
- Stigma, Discrimination, and Hate Crimes in Chinese-Speaking World amid Covid-19 Pandemic – Asian Journal of Criminology (Jan 6 2021)
- Without a trace: Why did corona apps fail? – Journal of Medical Ethics (Jan 6 2021)
- Science Is Just Another Opinion: Making Medical Stories Count Post–COVID-19 – Perspectives in Biology and Medicine (2020)
- COVID-19 media coverage decreasing despite deepening crisis – The Lancet Planetary Health (Jan 2021)
- Neurological infection with SARS-CoV-2 — the story so far – Nature Reviews Neurology (Jan 7 2021)
- Health systems neglected by COVID-19 donors – The Lancet (Jan 2021)
- Parenting in the time of COVID-19 – The Lancet (Jan 2021)
- Host and viral determinants for efficient SARS-CoV-2 infection of the human lung – Nature Communications (Jan 8 2021)

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