Washington State Department of Health

2019-nCoV Literature Situation Report (Lit Rep)
October 21, 2020

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

➢ **A meta-analysis (49 studies) reported no association between treatment with the antihypertensive drugs ACE-inhibitors or angiotensin receptor blockers and risk of SARS-CoV-2 infection. Additionally, the use of these medications was not associated with the risk of mortality or severe clinical outcomes.** More

➢ **A survey among 1,971 US adults reported that vaccine attributes and political characteristics of respondents were associated with self-reported preferences for choosing a hypothetical COVID-19 vaccine and self-reported willingness to receive vaccination.** More

➢ **Analyses of COVID-19 mortality in the US found particularly strong racial and ethnic disparities among younger people (25-54 years old).** More

➢ **A novel olfactory-action meter, which measures how well a person smells odors, found that 82% of asymptomatic SARS-CoV-2 carriers had olfactory deficits, compared to 15% who reported olfactory deficits based on subjective evaluation.** More

Testing and Treatment

- A systematic review and meta-analysis (49 studies) reported no association between treatment with angiotensin-converting enzyme inhibitors (ACEI) and/or angiotensin receptor blockers (ARB) and risk of SARS-CoV-2 infection (adjusted OR=1.00, 95%CI 0.94-1.05). The use of ACEI/ARB was also not associated with the risk of mortality (aOR=0.87, 95%CI 0.66-1.04) and severe outcomes (aOR=0.95, 95%CI 0.73-1.24). These findings remain consistent in subgroup analyses stratified by populations and drug exposures and in other secondary outcomes.

  Xu et al. (Oct 20, 2020). The Effect of Prior ACEI/ARB Treatment on COVID-19 Susceptibility and Outcome: A Systematic Review and Meta-Analysis. Clinical Infectious Diseases. https://doi.org/10.1093/cid/ciaa1592

- A novel design of an olfactory-action meter, which measures how well a person smells odors, found that 82% of asymptomatic SARS-CoV-2 carriers (n=34) had olfactory deficits, compared to 13% of health volunteers. By comparison, only 15% of asymptomatic carriers had olfactory deficits detected by subjective evaluation. This method evaluated a combination of olfactory detection abilities at threshold levels and olfactory matching skills reflecting cognitive functioning.

  Bhattacharjee et al. (Oct 16, 2020). Quantitative Assessment of Olfactory Dysfunction Accurately Detects Asymptomatic COVID-19 Carriers. EClinicalMedicine. https://doi.org/10.1016/j.eclinm.2020.100575

- A multiplex RT-PCR assay was able to detect and discriminate between samples that were positive for SARS-CoV-2 and influenza and was able to detect co-infections. The authors suggest that the assay may be used for diagnostic and surveillance purposes during the seasonal influenza activity period.

    Mancini et al. (Oct 20, 2020). Multiplex Rt-Real Time PCR Assays for Diagnostic Testing of SARS-CoV-2 and Seasonal Influenza Viruses. A Challenge of the Phase 3 Pandemic Setting. The Journal of Infectious Diseases. https://doi.org/10.1093/infdis/jiaa658

- *[Pre-print, not peer-reviewed]* Among 456 patients with clinical suspicion of COVID-19 and an initial negative PCR result for SARS-COV-2 by nasopharyngeal swab (March 1 to April 12, 2020), 94 (20%) were later confirmed as clinical COVID-19 cases. Among these, 47 (50%) tested positive with repeat PCR testing and 41 (44%) continued to have negative PCR results but were diagnosed from clinical documentation, discharge summary, or death certificate. These results are based on a review of medical admissions records at Imperial College Healthcare Trust in London, UK. The authors suggest health systems should recognize and plan for the management of swab-negative patients in their COVID-19 clinical management, infection control policies, and epidemiological assessments.

    Middleton et al. (Oct 21, 2020). Characteristics and Outcomes of Clinically Diagnosed RT-PCR Swab Negative COVID-19 a Retrospective Cohort Study. Pre-print downloaded Oct 21 from https://doi.org/10.1101/2020.10.20.20204651

Vaccines and Immunity

- A study among patients who tested positive for SARS-CoV-2 by PCR reported an increase in the detection of antibodies against the SARS-CoV-2 receptor binding domain (RBD) and spike protein using ELISA rapidly during the acute phase after infection, with a peak in detection around week 3. The detection of IgG antibodies remained robust, with confirmed neutralization activity for up to six months. The study cohort included 307 COVID-19 hospital patients and healthcare workers at a central hospital, 38 staff members at the University of Lisbon who were tested positive during the mass screening, and 198 plasma donors who registered voluntarily online in Portugal.

    Figueiredo-Campos et al. (Oct 21, 2020). Seroprevalence of Anti-SARS-CoV-2 Antibodies in COVID-19 Patients and Healthy Volunteers up to Six Months Post Disease Onset. European Journal of Immunology. https://doi.org/10.1002/eji.202048970

- A survey conducted in July, 2020 among a convenience sample of 1,971 US adults reported that preferences related to a hypothetical COVID-19 vaccine were associated with vaccine attributes (e.g., vaccine efficacy, adverse effects, and protection duration) and political factors (e.g., US FDA approval process, national origin of vaccine, and endorsements). Willingness to receive a vaccination was associated with healthcare attitudes and practices, political partisanship, and demographic characteristics including age, gender, and race/ethnicity.

    Kreps et al. (Oct 20, 2020). Factors Associated With US Adults' Likelihood of Accepting COVID-19 Vaccination. JAMA Network Open. https://doi.org/10.1001/jamanetworkopen.2020.25594

Clinical Characteristics and Health Care Setting

- Among a cohort of 523 patients hospitalized with COVID-19 from January 2 to February 15, 2020 in China, malnutrition was associated with higher risk of in-hospital death (OR=1.2) and higher risk of poor outcome in the ICU (OR=1.9). After adjustment for age and sex, low BMI and low protein level were also significantly associated with higher risks of severe outcomes. Malnutrition in this study was evaluated by the Nutrition Risk in Critically Ill Score and the Nutritional Risk Screening score.

Li et al. (Sep 30, 2020). Nutritional Risk and Therapy for Severe and Critical COVID-19 Patients: A Multicenter Retrospective Observational Study. Clinical Nutrition. https://doi.org/10.1016/j.clnu.2020.09.040

Mental Health and Personal Impact

- *[Pre-print, not peer-reviewed]* The mortality rate due to suicide in Massachusetts during the stay-at-home period (March through May, 2020) did not increase compared to a corresponding period in 2019 (0.67 vs. 0.81 per 100,000 person-month). These results are based on an observational cohort study using the Massachusetts Department of Health Registry of Vital Records and Statistics.

    Faust et al. (Oct 20, 2020). Suicide Deaths during the Stay-at-Home Advisory in Massachusetts. Pre-print downloaded Oct 21 from https://doi.org/10.1101/2020.10.20.20215343

- *[Pre-print, not peer-reviewed]* Analysis of cognitive test data from a large survey in Great Britain (n=84,285) found that people who recovered from COVID-19 exhibited significant cognitive deficits, with increasing degrees of underperformance found among those with greater symptom severity and level of medical assistance received for COVID-19 respiratory symptoms. The cognitive deficit was evaluated through tests of semantic problem solving, spatial working memory, selective attention and emotional processing. The authors conclude that these results support the hypothesis that COVID-19 has a multi-system impact on human cognition.

    Hampshire et al. (Oct 21, 2020). Cognitive Deficits in People Who Have Recovered from COVID-19 Relative to Controls An N=84285 Online Study. Pre-print downloaded Oct 21 from https://doi.org/10.1101/2020.10.20.20215863

Public Health Policy and Practice

- Racial and ethnic disparities in COVID-19 mortality rates are particularly strong among younger people. A cross-sectional study reported that as of July 22, 2020, the age-standardized COVID-19 mortality ratios (compared to non-Hispanic white) were 3.6 for people who are non-Hispanic Black, 2.2 for those who are non-Hispanic American Indian/Alaska Native, 2.2 for Hispanic people and 1.6 for non-Hispanic Asian or Pacific Islanders. These racial/ethnic disparities were even more pronounced in younger people (25-54 years old).

    Bassett et al. (Oct 20, 2020). Variation in Racial/Ethnic Disparities in COVID-19 Mortality by Age in the United States: A Cross-Sectional Study. PLOS Medicine. https://doi.org/10.1371/journal.pmed.1003402

- The excess all-cause mortality and employment displacement resulting from the COVID-19 pandemic in the US was distributed unevenly, with very high concentrations in a small number of states. In April 2020, the national excess all-cause mortality was 2.4 per 10,000 individuals and employment displacement was 9.9 per 100 individuals. The authors identified the excess mortality was highly concentrated, with the two states (New York and New Jersey) accounting for about half of the national excess mortality. In contrast, the impact on employment displacement was more spread out, with the two states with the highest employment displacement (Nevada and Michigan) accounting for only 7% of the national displacement.

    Polyakova et al. (Oct 20, 2020). Initial Economic Damage from the COVID-19 Pandemic in the United States Is More Widespread across Ages and Geographies than Initial Mortality Impacts. Proceedings of the National Academy of Sciences. https://doi.org/10.1073/pnas.2014279117

Other Resources and Commentaries

- Sleeping Within Six Feet: Challenging Oregon's Labor Housing COVID-19 Guidelines – Journal of Agromedicine (Oct 20)

- [How Societal Responses to COVID-19 Could Contribute to Child Neglect](#) – Child Abuse & Neglect (Oct 15)
- [Dozens to Be Deliberately Infected with Coronavirus in UK "human Challenge" Trials](#) – Nature (Oct 20)
- [Psychiatric Disorders and Hydroxychloroquine for Coronavirus Disease 2019 (COVID-19): A VigiBase Study](#) – Drug Safety (Oct 19)
- [Evaluation of Nowcasting for Real-Time COVID-19 Tracking - New York City March-May 2020](#) – Medrxiv (Oct 20)
- [Association Between Early Treatment With Tocilizumab and Mortality Among Critically Ill Patients With COVID-19](#) – JAMA Internal Medicine (Oct 20)
- [Emotional Responses to Prosocial Messages Increase Willingness to Self-Isolate during the COVID-19 Pandemic](#) – Personality and Individual Differences (Oct 15)
- [Face Masks to Prevent Transmission of COVID-19 a Systematic Review and Meta-Analysis](#) – Medrxiv (Oct 20)
- [A Comparative Analysis of Statistical Methods to Estimate the Reproduction Number in Emerging Epidemics with Implications for the Current COVID-19 Pandemic](#) – Clinical Infectious Diseases (Oct 20)
- [Mental Models of Infectious Diseases and Public Understanding of COVID-19 Prevention](#) – Health Communication (Oct 21)
- [Coronavirus Disease among Workers in Food Processing, Food Manufacturing, and Agriculture Workplaces](#) – Emerging Infectious Diseases (Oct 19)
- [What Predicts Adherence to COVID-19 Government Guidelines Longitudinal Analyses of 51000 UK Adults](#) – Medrxiv (Oct 21)

Report prepared by the UW Alliance for Pandemic Preparedness and Global Health Security and the START Center in collaboration with and on behalf of WA DOH COVID-19 Incident Management Team