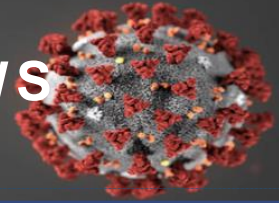


WEEK IN REVIEW

COVID-19 SCIENTIFIC NEWS

MAY 25 – 29, 2020



**MS Literature Review Task Force: Mary Chandler Gwin, Tin Phan,
Laiken Price, Feiyun Ma, and Peter Triggiani**
Faculty Advisor: Louise King, MD

The MS Literature Review Task Force is a group of UNC medical and pharmacy students who conduct daily literature searches for scientific updates on COVID-19. Contact Mary Chandler Gwin, mary_gwin@med.unc.edu for any comments, questions, etc.

LATEST ARTICLES:

CLINICAL INFORMATION

[Clinical and Chest Radiography Features Determine Patient Outcomes In Young and Middle Age Adults With COVID-19](#). Toussie, D. et al., *Radiology*, 14 May 2020.

- In this retrospective study, patients between the ages of 21 and 50 years old who presented to the EDs of an urban multicenter health system with laboratory confirmed Covid-19 had their chest x-rays scored and analyzed to evaluate clinical parameters with CXR scores and patient outcomes. CXR scores were shown to be predictive of risk for hospital admission and intubation.

[Pulmonary Vascular Endothelialitis, Thrombosis, and Angiogenesis in Covid-19](#). Ackermann, M. et al., *NEJM*. 21 May 2020.

- Comparing 7 lungs on autopsy from Covid-19 patients and 7 lungs from autopsy of H1N1 patients, researchers found distinctive vascular features in the Covid-19 lungs including severe endothelial injury in the presence of intracellular virus and disrupted cell membranes. Alveolar microthrombi were 9 times as prevalent in patients with Covid-19 as in patients with H1N1. Further studies are required to determine the clinical significance of the distinct vascular pathologies of these diseases.

[Scope, quality, and inclusivity of clinical guidelines produced early in covid-19 pandemic: rapid review](#). Dagens, A. et al., *BMJ*. 26 May 2020.

- A rapid review was performed to assess the availability, quality and inclusivity of clinical guidelines produced during the early stage of the COVID-19 pandemic utilizing the Appraisal of Guidelines for Research and Evaluation (AGREE) II tool. 42 guidelines were evaluated, with 18 being specific for Covid-19. The guidelines lacked detail and did not make many provisions for vulnerable groups such as pregnant women, children, and older people. In addition, the quality was poor specifically in the domains of stakeholder involvement, applicability and editorial independence. A framework for developing guidelines in an emergent setting needs to be developed to ensure inclusion of vulnerable populations.

PUBLIC HEALTH/EPIDEMIOLOGY

[Epidemiology and Transmission of COVID-19 in 391 Cases and 1286 of Their Close Contacts in Shenzhen, China: A Retrospective Cohort Study](#) Qifang B, Yongsheng W, Shujiang M, et al., *Lancet Infectious Disease*. 27 Apr 2020.

- The key metrics of disease course, transmission and impact of control measures was evaluated during an outbreak in Shenzhen, China. Three hundred and ninety one confirmed cases and 1286 of their close contacts were assessed after isolation/contact tracing measures were put into place. Between 14 Jan 2020 and 12 Feb 2020, 91% of cases had mild or moderate clinical severity at initial assessment. Cases were isolated on average 4-6 days (95% CI 4.1–5.0) after developing symptoms. Contact tracing was found to reduce isolation by 1.9 days (95% CI 1.1–2.7). Household secondary attack rate was 11.2% (95% CI 9.1–13.8). This study found that children were as likely as adults to be infected (infection rate 7.4% in children <10 years vs population average of 6.6%). The observed reproductive number (R) was 0.4 (95% CI 0.3–0.5), and the mean serial interval of 6.3 days (95% CI 5.2–7.6).

THERAPEUTIC DEVELOPMENTS

[Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis.](#) Mehra, M. R. et al. *The Lancet*. 22 May 2020.

- Multinational registry analysis of 671 hospitals in 6 continents examined hospitalized COVID-19 patients who received either chloroquine (CQ) or hydroxychloroquine (HCQ) with or without a macrolide (M) within 48 hours of diagnosis and who were not on ventilators at time of treatment and who did not receive remdesivir. 96,032 patients were included. All treatments were independently associated with a statistically significant increase in in-hospital mortality and ventricular arrhythmia, compared to controls. Baseline disease, BMI, underlying cardiovascular disease and its risk factors, diabetes, underlying lung disease, smoking, immunosuppressed condition, age, sex, race or ethnicity were all controlled for. Control mortality was 9.3%, HCQ 18.0% (hazard ratio 1.335 95% CI 1.223-1.457), HCQ with M 23.8% (1.447, 1.368-1.531), CQ 16.4% (1.365, 1.218-1.531), CQ with M 22.2% (1.368, 1.273-1.469). Control risk for de-novo ventricular arrhythmia was 0.3%, HCQ 6.1% (2.369, 1.935-2.900), HCQ with M 8.1% (5.106, 4.106-5.983), CQ 4.3% (3.561, 2.760-4.596), CQ with M 6.5% (4.011, 3.344-4.812).

[Remdesivir for the Treatment of Covid-19 – Preliminary Report.](#) Beigel, J. H., et al. *NEJM*, 22 May 2020.

- In this phase III, multicenter, double blind, randomized, placebo-controlled trial: 1059 pts were monitored for time to recovery of 200 mg LD then 100 mg daily for 9d of IV remdesivir vs placebo for 10 days. Ratio of recovery of remdesivir to placebo was 1.32; 95% CI 1.12-1.55; P<0.001 ; 11d for patients on remdesivir compared to 15days for the control group. Twenty one percent (n=114) of pts in remdesivir had severe ADE compared to 27% (n=141) in placebo. Ten days remdesivir IV is superior to placebo, especially in pts with baseline ordinal score of 5 (receiving oxygen). The overall mortality rate in the remdesivir group was 7.1%, and 11.9%, giving a hazard ratio of 0.7. However this was not statistically significant with CI of the HR 0.47-1.04.

[Safety, tolerability, and immunogenicity of a recombinant adenovirus type-5 vectored COVID-19 vaccine: a dose-escalation, open-label, non-randomized, first-in-human trial.](#) Zhu, F. et al. *The Lancet*. 22 May 2020.

The adenovirus type-5 (Ad5) vectored Covid-19 vaccine expressed the spike glycoprotein of SARS-CoV-2 and was given at 3 different dosing levels to a total of 108 healthy participants. Most adverse reactions were mild to moderate, therefore the researchers determined the vaccine to be tolerable. The vaccine was also found to be immunogenic and at 28 days post-vaccination humoral responses peaked and specific T-cell immune responses were identified by 14 days post-vaccination. Further investigations into long-term immunogenicity and safety of the vaccination are required.

GUIDELINES AND FIGURES:

FROM CDC

[Resources for State, Local, Territorial and Tribal Health Departments](#)

- Infection control emphasis so that health departments can stay open
- Financial resources
- Funeral and burial services for American Indians and Alaska Natives

May 26 – [Outpatient and Ambulatory Care Settings](#)

- Removed language about cancelling and delaying non-urgent visits/elective procedures
- Recommends actively screening healthcare personnel, patients, and visitors for fever and symptoms
- Implement source control for everyone entering healthcare facility

May 28 – [Guidance for Pharmacies](#)

- Provide clinical services according to [Framework for Healthcare Systems Providing Non-Covid-19 Clinical Care During the Pandemic](#)

May 29 – [Households Living in Close Quarters](#)

- All family members should act as if they are high risk, if there is one or more vulnerable individuals living in the house
- Choose one or two family members that are not high risk to run the errands
- Wear cloth face covering, avoid crowds, and practice physical distancing
- Limit use of public transportation and do not ride in a car with members of different households
- Maintain as much physical distance as possible with those at higher risk such as hugging, kissing, or sharing food or drinks

FROM WHO

May 25 – [Situation Report 126](#)

- WHO Regional Office for Africa provided training for Tanzanian health workers to care for critically ill Covid-19 patients.
- UK will contribute \$3.8m for Covid-19 response in the Caribbean
- WHO is partnering with Vital Strategies and other global partners to release: Revealing the Toll of COVID-19: A Technical Package for Rapid Mortality Surveillance and Epidemic Response.

May 26 – [Situation Report 127](#)

- WHO Director-General Dr Tedros, in his regular media briefing, mentioned that “over 400 hospitals in 35 countries are actively recruiting patients and nearly 3500 patients have been enrolled from 17 countries” as part of the Solidarity Trial which was established to evaluate the safety and efficacy of four drugs and drug combinations against COVID-19
- Influenza surveillance systems are continuing to be repurposed for COVID-19
- The WHO is working to get medical supplies to vulnerable countries due to the shortage

May 27 – [Situation Report 128](#)

- WHO published case-control protocol for assessment of risk factors for COVID-19 in health workers – primary objective of study is to assess risk factors for SARS-CoV-2 in health workers
- Brief published by WHO to investigate association between smoking and increased risk for COVID-19
- Updates were made on the COVID-19 Strategic and Preparedness Plan

May 28 – [Situation Report 129](#)

- Interim guidance on the clinical management of COVID-19, specifically for clinicians caring for patients through all phases
- Guidance from WHO on ethical considerations for using digital proximity tracking technologies for COVID-19 contact tracing
- Regional Director of the Americas made a statement that the response to the COVID-19 pandemic in the Americas must include chronic disease care

FROM JOHNS HOPKINS

[US State Testing by Race](#) (NC has not released any data regarding race and testing yet).

CASES/DEATHS: WORLD/US/NC/ORANGE COUNTY AS OF 11AM ON 05/29/2020

- World: 5,844,499/361,249
- US: 1,722,419/101,698
- NC: 24,916/844
- Orange County, NC: 314/40