UCSF Institute for Global Health Sciences

COVID-19 Research Watch
May 25, 2020

NATURAL HISTORY OF INFECTION

Coronavirus Disease 2019 Test Results After Clinical Recovery and Hospital Discharge Among Patients in China[1]

Aiming to understand viral shedding after discharge, researchers in Loudi, China tested viral presence in 60 patients previously hospitalized with Covid-19 and discharged before February 27th, 2020. Patients were tested for SARS-CoV-2 through RT-PCR of nasopharyngeal and anal swab specimens, resulting in positive tests in 10 patients, two of which had clinical symptoms and were readmitted. The time between discharge and positive retests ranged from 4 to 24 days. Positive tests are presumed to be the result of continued viral shedding rather than reinfection, as all participants were instructed to isolate and local cases were rare. The authors highlighted one case with a positive test result confirmed 56 days after initial illness onset. These findings align with previous studies demonstrating long-term shedding of the virus in faeces, although infectivity is unknown. The authors suggest subsequent studies include larger cohorts and perform testing for infectivity, to understand how this could inform disease management after discharge.

PHARMACEUTICAL INTERVENTIONS

Safety, tolerability, and immunogenicity of a recombinant adenovirus type-5 vectored COVID-19 vaccine: a dose-escalation, open-label, non-randomised, first-in-human trial[2]

One hundred and eight participants, aged 18-60, received one of three dose levels of an intramuscular injection of the Beijing Institute of Biotechnology and CanSino's non-replicating adenovirus type-5 (Ad5) vectored Covid-19 vaccine. Results showed that the vaccine was tolerated in all three dosage groups, as no serious adverse reactions were seen and no significant differences in incidence and prevalence of adverse reactions were found between the groups. Mild to moderate adverse events included fever, fatigue, headache, muscle pain, and pain at injection site. All groups experienced humoral and T-cell responses, but antibody response was slightly greater in the high dose group. Although the vaccine proved safe, tolerable and immunogenic, its effectiveness against Covid-19 cannot be predicted as it is unknown whether the elicited immune response is protective against the virus. However, the vaccine has moved onto phase 2 trials and phase 1 participants will continue to be followed for at least 6 months.

REGION-SPECIFIC LESSONS LEARNED

Risk Factors for SARS-CoV-2 among patients in the Oxford Royal College of General Practitioners Research and Surveillance Centre primary care network: a cross-sectional study[3]

The aim of the study was to identify demographic and clinical risk factors for SARS-CoV-2, through the analysis of 3,802 SARS-CoV-2 test results of participants recruited through the Oxford Royal College of General Practitioners Research and Surveillance Centre primary care sentinel network. The findings suggested potential risk factors may include: older age group (40-64 years old, OR 5.36), male gender (OR 1.55), black ethnicity (OR 4.75), high socioeconomic deprivation level (OR 2.03), living in an urban settlement (OR 4.59), obesity (OR 1.41), and chronic kidney disease (OR 1.91). To better understand the epidemiology of COVID-19 in relation to additional socioeconomic factors, such as employment type, education or income level, the authors call for additional population-based studies which will simultaneously aid in reducing potential selection bias.

NON-PHARMACEUTICAL INTERVENTIONS

Simulated Sunlight Rapidly Inactivates SARS-CoV-2 on Surfaces[4]

The authors looked at the effect of simulated sunlight to inactivate SARS-CoV-2. They used a gradient of light mimicking varying daytime and seasonal sun light (UVB) conditions on suspended virus in either simulated saliva or gMEM media. Compared specimens in darkness, the virus in simulated saliva and gMEM were significantly inactivated by UVB. Higher inactivation rates were seen at higher UVB intensities and when the virus was suspended in simulated saliva rather than gMEM. The authors indicate that sunlight may be an effective tool to disinfect non-porous materials, although this affect will depend on season and weather conditions, particularly cloud cover.

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. Anika Kalra and Harry Lin contributed to these summaries. This work is volunteer based.

References:

1 Wu J, Liu X, Liu J, *et al.* Coronavirus Disease 2019 Test Results After Clinical Recovery and Hospital Discharge Among Patients in China. *JAMA Netw Open* 2020; **3**: e209759.

2 Zhu F-C, Li Y-H, Guan X-H, *et al.* Safety, tolerability, and immunogenicity of a recombinant adenovirus type-5 vectored COVID-19 vaccine: a dose-escalation, open-label, non-randomised, first-in-human trial. *Lancet* 2020; published online May. DOI:10.1016/S0140-6736(20)31208-3.

3 de Lusignan S, Dorward J, Correa A, *et al.* Risk factors for SARS-CoV-2 among patients in the Oxford Royal College of General Practitioners Research and Surveillance Centre primary care network: a cross-sectional study. *Lancet Infect Dis* 2020; **3099**. DOI:10.1016/S1473-3099(20)30371-6.

4 Ratnesar-shumate S, Williams G, Green B, *et al.* Simulated Sunlight Rapidly Inactivates SARS-CoV-2 on Surfaces. 2020.