WashU Med Student Coronavirus Response Literature Reviews

Biology

SARS-CoV-2 productively infects human gut enterocytes

- Both SARS-CoV and SARS-CoV-2 can infect enterocytes and enterocyte precursors with productive viral replication in a human small intestinal organoid model.

Structure of inhibition of the SARS-CoV-2 RNA-dependent RNA polymerase by remdesivir

- Partial double-stranded RNA template is inserted into the central channel of the RdRp where Remdesivir is covalently incorporated into the primer strand at the first replicated base pair and terminates chain elongation.

Epidemiology

Out-of-hospital cardiac arrest during the COVID-19 outbreak in Italy

- Compared to the same time period in 2019, there was a 58% increase in out-of-hospital cardiac arrests. The cumulative incidence of out-of-hospital cardiac arrests was significantly correlated with the cumulative incidence of COVID-19 in the same area.

Reduced Rate of Hospital Admissions for ACS during Covid-19 Outbreak in Northern Italy

- Compared to the same time period in 2019 and prior to the local COVID-19 outbreak, there was a significantly reduced number of hospital admissions for acute coronary syndrome.

Changes in contact patterns shape the dynamics of the COVID-19 outbreak in China

- Model using contact tracing data from China suggests that social distancing alone was sufficient to control COVID-19, while proactive school closures can reduce peak incidence by 40-60% and delay the epidemic.

Diagnosis & Prevention

Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals

- SARS-CoV-2 RNA was present at highest levels among aerosols near patient toilet areas. Other areas in the hospital, including ventilated patient rooms, had lower levels to undetectable RNA among their aerosols.

Large-vessel stroke as a presenting feature of COVID-19 in the young

- Five patients with SARS-CoV-2 infection under fifty years of age present with large-vessel ischemic stroke.

Treatment

Remdesivir in adults with severe COVID-19: a randomized double-blind, placebo-controlled, multicenter trial

- This randomized clinical trial of remdesivir as a treatment for COVID-19 found no significant difference in clinical improvement between its two arms. However, restrictions and improvements in the pandemic situation in Wuhan lead to lower than anticipated enrollment in the study and thus reduced the studies power to detect differences.

A SARS-CoV-2 protein interaction map reveals targets for drug repurposing

- Affinity-purification mass spectrometry (AP-MS) revealed 66 druggable human proteins or host factors interacting with SARS-CoV-2 that could be targeted by 69 compounds.

Prognosis

Cardiovascular disease, drug therapy, and mortality in COVID-19

- Cardiovascular disease, but not the use of ACE inhibitors/ARBs is associated with an increased risk of in-hospital death among hospitalized Covid-19 patients.
Literature Review Leadership Team

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