

Articles about COVID-19 for June 8th to June 12th

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Name of Article + Link	Journal, Date	Category of Study	Question it asks	Results in Brief	Implications + Limitations	Initials
Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis	The Lancet, June 1, 2020	Public health/Epi	Do physical distancing, face masks, and eye protection help prevent person-to-person transmission of respiratory disease?	The authors searched for published papers that investigated the effects of physical distancing and PPE use in lowering the transmissions of SARS, MERS, and COVID19. They then did a meta-analysis of all published papers and concluded that transmission of virus was lower with physical distancing of 1 m or more. Face masks and eye protection use also resulted in reduction of risk of infection.	Implications: Findings from this article could temporarily guide public health policy and optimal use of PPE during a Pandemic. Limitations: This study is a systematic review and meta-analysis of previous studies, which do not provide conclusions that are as robust as randomized controlled trials.	EX
SARS-CoV-2 Reverse Genetics Reveals a Variable Infection Gradient in the Respiratory Tract	Cell, July 23, 2020	Basic Science	Goal: investigate virus-host interactions in protective immunity, host susceptibility, and virus pathogenesis.	Used RNA in situ mapping and found highest ACE2 expression in the nose with decreasing expression throughout the lower respiratory tract. Same gradient of SARS-CoV-2 infection in proximal (high) versus distal (low) pulmonary epithelial cultures. Autopsy studies showed focal disease congruent with this data.	<u>Implications:</u> findings highlight the nasal susceptibility to SARS-CoV-2 with likely subsequent aspiration-mediated virus seeding to the lung in SARS-CoV-2 pathogenesis. Ciliated airway cells and AT-2 cells are primary targets for SARS-CoV-2 infection.	CR

				Also created SARS-CoV-2 infectious cDNA clone and reporter viruses and neutralization assays showed limited cross neutralization		
Epidemiology, Clinical Features, and Disease Severity in Patients With Coronavirus Disease 2019 (COVID-19) in a Children's Hospital in New York City, New York	<i>JAMA Pediatrics</i> , 03 Jun 2020	Public Health/Epi; Case Series	What are the clinical manifestations of children and adolescents hospitalized with COVID-19?	<p>Sample size (n=50); children (21 years or younger) hospitalized in academic center in NYC, NY from 01 Mar 2020 to 15 Apr 2020</p> <p>54% male, 50% Hispanic; most patients has fever/respiratory symptoms. Infants were significantly less likely to present with respiratory distress than older children/adolescents. Atypical presentations were found to be seizure/seizure-like activity (CSF fluid tested positive for Sars-CoV-2), recurrent pneumothorax, loss of smell, severe odynophagia. One post-liver transplant patient developed hepatitis after receiving liver from COVID-infected donor.</p> <p>7 patients experienced GI symptoms. 4 patients had codetection of another respiratory virus. Bacterial coinfections also occurred.</p>	<p><u>Implications:</u> Since the disease course is so variable in children, it's important to have proper testing protocols. Two parents became COVID-infected during their child's hospital course, so the authors suggest greater vigilance in visitors with symptoms.</p> <p>Infants were largely spared in this study, contrary to previous reports.</p> <p>Some patients experienced prolonged positive tests compared to what was previously known about how long patients remain positive through nasopharyngeal swab testing.</p> <p><u>Limitations:</u> Hospital primarily serves Hispanic patients, so</p>	LP

				The most prevalent comorbidity was obesity (22%).	findings may not be able to be extrapolated for other populations. There was a small sample size.	
The ABO blood group locus and a chromosome 3 gene cluster associate with SARS-CoV-2 respiratory failure in an Italian-Spanish genome-wide association analysis	MedRxiv Preprint, 2 June 2020	Case-control study	Are there SNPs that are associated with worse COVID-19 outcomes? Are blood types more likely to be infected with SARS-CoV-2?	<p>Authors studied SNPs from patients with severe COVID-19 (defined as respiratory failure; stratified as requiring supplemental oxygen only vs mechanical ventilation of any kind) and from controls obtained from random sample of blood donors to determine potential SNPs associated with worse disease. Two SNPs, rs11385942 and rs657152, were associated with increased rates of mechanical ventilation with odds ratios of 2.11 (1.70-2.61) and 1.39 (1.22-1.59), respectively after adjusting for age and sex. Rs11385942 is located in the region coding for SLC6A20 which codes for an ion transporter than directly interacts with ACEII.</p> <p>Authors claim higher risk of infection for A-positive patients (OR = 1.45 CI, 1.20-1.75) and lower risk of infection for blood group O</p>	<p>Implications: Further evidence that differences in outcomes for COVID-19 patients may be tied to genetic variation. Minor allele frequency for rs11385942 differs across geographic regions (monomorphic in China), which could explain discrepancies in mortality rates between populations.</p> <p>Limitations: Control groups were derived from random sampling of blood donors which may not be represented of actual prevalence of blood types. No demographic data other than age and sex were used to control for clinical outcomes, such as comorbidities, etc. Only severe COVID-19 cases were sampled, so comparisons between severe and mild cases</p>	CS

				(OR = 0.65 CI, 0.53 - 0.79). There were no differences in respiratory failure severity between blood groups within COVID-19 cases.	cannot be made. No comparisons on mortality were noted in the data.	
A Randomized Trial of Hydroxychloroquine as Postexposure Prophylaxis for Covid-19	D.R. Boulware, M.F. Pullen NEJM June,3	Therapeutic	Can HCQ prevent symptomatic infection after SARS-CoV-2 exposure?	This is a randomized, double-blind, placebo-controlled trial to evaluate postexposure prophylaxis with hydroxychloroquine after exposure to Covid-19. The inclusion criteria were at least 18 years old, had household or occupational exposure to someone with confirmed Covid-19 at a distance of less than 6 ft for more than 10 minutes while wearing neither a face mask nor an eye shield (high-risk exposure) or while wearing a face mask but no eye shield (moderate-risk exposure).821 asymptomatic participants were enrolled in the study. 87.6% of the participants reported a high-risk exposure. The median age was 40 years and 51.6% were women. 27.4% of the participants reported chronic health conditions. 414 participants were in the HCQ group and 407 were in the placebo group. Intervention was started within 4 days	Limits: 1.This study recruited and followed up participants through the internet, we are not sure how the participants take the medication, which will influence the results. 2.Also the participants are relatively young and healthier, so the conclusion of the study cannot generalize to older people. 3. Due to the lack of availability of diagnostic testing , the majority of participants including health care workers were unable to access testing. A big influence on the accuracy of results. Implication: This randomized trial did not demonstrate a significant benefit of hydroxychloroquine as postexposure prophylaxis for Covid-	FM

				<p>after exposure, the regimen was placebo/HCQ 800 mg once, followed by 600 mg in 6-8 hrs and then 600 mg daily for additional 4 days. The primary outcome was the incidence of either laboratory-confirmed Covid-19 or illness compatible with Covid-19 within 14 days. From the analysis they found out that there is no significant difference in the incidence of new illness compatible with COVID-19 between HCQ group (11.8%) and placebo group (14.3%), the absolute difference was - 2.4 % (95% confidence interval -7.0 to 2.2;P=0.35>0.05) , the side effects were more common with HCQ than with placebo.</p>	<p>19. But need more studies to confirm these findings.</p>	
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