



Reference of the Week

- Evidence for dexamethasone use in COVID-19: RECOVERY Trial (Randomised Evaluation of COVID-19 Therapy) <https://www.recoverytrial.net/> pdf
Methods: 1. Open label RCT of hospitalized adults in England with SARS-CoV-2. 2. *Complicated randomization* assessing the efficacy of 6 different interventions. 3. Primary endpoint is 28 day mortality with additional outcomes including discharge, need for mechanical ventilation, and need for renal replacement therapy. 4. Dexamethasone (dex) 6 mg IV or by mouth for ten days.
Findings: 1. 2104 dex patients vs 4321 standard of care (SOC) patients from over 175 NHS hospitals. 2. Recruitment to the dex arm halted due to the strength of dex efficacy in reducing mortality. 3. 28 day mortality in ventilated patients with SOC, 41% versus 27% in the dex patients with lesser reductions seen in less severe patients. 4. Major concerns: this is in a press release from the RECOVERY web site and not a peer reviewed article; mortality of 41% in the control group is 2 – 3 times as high compared to other COVID-19 studies; details of randomization, timing, and additional interventions await publication.

Other References:

- Evidence that blood type may be associated with differential risk of severe COVID-19: Ellinghaus E. Genomewide association study of severe COVID-19 with respiratory failure. NEJM. 06.17.2020. <https://www.nejm.org/doi/full/10.1056/NEJMoa2020283> pdf
Methods: 1. The primary outcome of this study was to determine an association between severe respiratory failure from COVID-19 and patient level genetic characterization to ascertain why some patients have more severe disease than others. 2. Severe respiratory failure COVID-19 patient genetic data from ICU patients in Italy and Spain was compared with control subjects primarily obtained from randomly selected blood donors. 3. DNA was extracted from whole blood; genotyping performed; followed by single-nucleotide polymorphism imputation analysis. 4. Subpopulations, mechanically ventilated and no mechanical ventilation, were selectively assessed.
Findings: 1. Gene variants in two regions of the human genome appear to confer risk for severe COVID-19. 2. Patients with blood type A have a greater risk of requiring oxygen or mechanical ventilation. 3. Patients with blood type O appear to have a reduced risk for severe disease. 4. Relevant to the genetic risk equation are 6 genes related to ACE-2 and chemokine receptors.
- Fosbol EL. Association of Angiotensin-Converting Enzyme Inhibitor [ACE-I] or Angiotensin Receptor Blocker [ACE-B] Use with COVID-19 Diagnosis and Mortality. JAMA. 06.19.2020. <https://jamanetwork.com/journals/jama/fullarticle/2767669> pdf
Methods: 1. Retrospective query of a Danish administrative data registry of adult COVID-19 patients. 2. Examination of the association of ACE-I and ACE-B on the outcome of COVID-19 patients. 3. Upregulation of ACE-2 receptor by these drugs theoretically provides greater susceptibility to agents that use ACE-2 receptor for cell entry. 4. Primary outcome was death with secondary outcomes death+severe disease and COVID-19 diagnosis comparing patients who used ACE-I/ACE-B and those who did not.
Findings: 1. For mortality and severe disease, 895 COVID-19 patients using ACE-I/ACE-B were compared to 4,480 patients who were not. 2. Users of ACE-I/ACE-B were older, more likely to have co-morbid conditions, and more often men: users were not at greater risk of either mortality or mortality+severe disease. 3. For susceptibility, 571 hypertensive patients with COVID-19 were compared to 5710 hypertensive patients without COVID-19. 4. Users of ACE-1/ACE-B were no more susceptible to contracting COVID-19.
- Hua CZ. Epidemiological features and viral shedding in children with SARS-CoV-2 infection. J Virology. 06.15.2020. <https://onlinelibrary.wiley.com/doi/10.1002/jmv.26180> pdf
Methods: 1. Retrospective multi-center pediatric study (≤ 14 years) from data extracted from the Zhejiang Provincial CDC master database. 2. All cases confirmed with PCR testing and all patients hospitalized (including asymptomatic patients and patients with mild disease).
3. Strong measures to verify data. 4. Outcomes included determining the susceptibility of children to SARS-CoV-2, clinical characteristics, incubation period in children, treatment, and findings of mandated chest CT findings in children.
Findings: 1. 43 children identified with SARS-CoV-2 out of 1,298 cases in the province (3.3%). 2. Incidence of SARS-CoV-2 infection in children contacts 13.2% was lower than adult contacts (21.2%) suggesting less susceptibility. 3. The mean incubation



time in children was 9.1 days (range 4-21 days) which is longer than reports of primarily adult studies of 5.3 days. **4.** Chest CT findings revealed minor abnormalities, fecal shedding of RNA was prolonged, and all 43 children did well.

- Rawlinson R. COVID-19 pandemic - let's not forget surfaces. J of Hosp Infect. 06.2020 (research letter). [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30253-X/pdf](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30253-X/pdf) pdf

Methods: **1.** SARS-CoV-2 remains viable for up to 72 h on plastic and steel surfaces, and for up to 8 h on copper and cardboard surfaces suggesting that surface transmission is possible if not likely. **2.** The cauliflower mosaic virus was used as a surrogate to determine the spread of SARS-CoV-2 on clinical surfaces. **3.** A pediatric bed railing inside an isolation room was inoculated and 44 samples/day from the environment were obtained over 5 days.

Findings: 1.

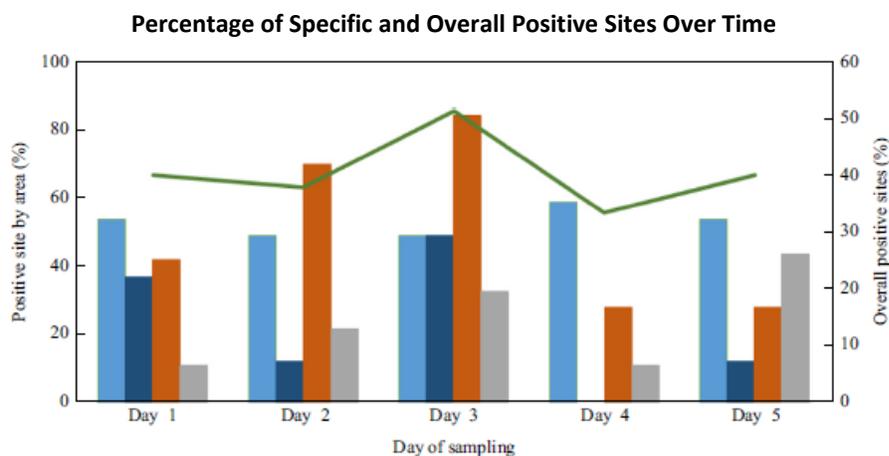


Figure 1. Percentage of positive sites overall and in different areas following daily ward sampling of 44 sites. Light blue bars, immediate bedspace; dark blue bars, wider bedspace; orange bars, clinical areas; grey bars, general ward; green line, overall percentage positive.

2. This study revealed failures in environmental cleaning and hand hygiene. **3.** Surrogate DNA persisted on surfaces with 41% positive sites on Day 5 with contaminated sites both within and outside the isolation room. **4.** Healthcare workers cannot prevent the spread of the virus during AGPs and contact with infected patients unless strict hand hygiene, careful donning and doffing of personal protective equipment, and consistent cleaning is undertaken.

SEE THE ARTICLE CABINET ON THE S: DRIVE, "COVID-19 ARTICLE RESOURCE CABINET" FOR CHILDREN'S FULL COLLECTION