

Develop – DeVos Cardiovascular Research Program’s Emergency Letter on the Pandemic

Scientific Stream Update on the COVID-19 Pandemic – 4.23.20 – revised 4.30.20 1030

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An Overview of Pharmacological Treatment Targeting COVID-19

Article Title: Pharmacologic Treatments for Coronavirus Disease 2019 (COVID-19) A Review

<https://jamanetwork.com/journals/jama/fullarticle/2764727>

Source: JAMA

Clinical Field: Infectious Disease

Article Type: Other

Study Type: Other

Patient Group: COVID-19

Intervention: Treatment Review

Reviewer	Stefan Jovinge
Study Design	N/A
Study Design Concerns	Review Article
Main Results	<p>Review of pharmacological treatment of COVID-19:</p> <ul style="list-style-type: none"> - Remdesivir: RNA polymerase inhibitor. No conclusive evidence. - Favipavir: RNA polymerase inhibitor: - Corticosteroids: Meta-analysis ion influenza (n=6548) showed harm, ARDS pat with COVID-19 (n=201) indicated benefit. No general conclusion can be made at this stage. - Tocilizumab: Lack of controlled studies
Comments	In summary there is no support for any special regimens or treatments in COVID-19. Mainly through conflicting results or laco of RCT and smaller studies with an obvious risk of bias.

Dying of COVID-19 is something that older > 50, men with co-morbidities do

Article Title: Clinical Characteristics of Patients Who Died of Coronavirus Disease 2019 in China

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2764293>

Source: JAMA

Clinical Field: Infectious Disease

Article Type: Clinical Report

Study Type: Retrospective Study

Patient Group: COVID-19 patients that died

Intervention: Retrospective study

Reviewer	Vinu Perinjellil
Study Design	Minor concerns
Study Design Concerns	<p>1) data is collected on mortality is between January 21-30 (10 days), prior cases of death from COVID not included or not able to be ascertained AND later cases of COVID-19 are also not represented in this data set</p> <p>2) documented comorbidities did not include asthma, transplant patients or other immunosuppressive conditions, which could highlight subpopulations at risk</p>
Main Results	<p>This is a case series documenting the 168 deaths from COVID-19 obtained from 28 hospitals in Wuhan, China from January 21-30, 2020.</p> <p>Clinical characteristics of these patients were described and detailed. Of 168 patients, a majority were men (n=126, 75%), median age was 70, and 161 patients were older than 50 years. The most common comorbidities included hypertension (n=84, 50%), diabetes (n=42, 25%) and ischemic heart disease (n=31, 18.5%). While all patients received oxygen therapy during their hospital stay, 27.4% (n=26) of patients only received nasal or face mask oxygen therapy before they died. In addition, 1/3 of patients (n=58) received high flow oxygen therapy and 72 patients received non invasive ventilation. 2 patients received ECMO, and only 1/5 of patients who died of COVID-19 (n=34) received invasive mechanical ventilation and further aggressive respiratory support which could mean delayed intubation was a reason for decline into death. While silent hypoxemia could be a reason for the delay, a lack of ventilators and lack of intensivists/critical care experts managing the care in these COVID patients could be the cause of delay.</p>
Comments	<p>In future, outlining basic parameters for appropriate vs delayed intubation could help facilitate discussion on best practice for respiratory support, not outlined here. Also hypertension is a prominent characteristic in COVID-19 patients however not usually shown to be an independent risk factor for mortality in sepsis, further studies in larger group with statistical analysis could help understand its correlation to outcomes</p>

Virus Present in General > 7 days and In Half of the Cases In the Stool As Well

Article Title: Epidemiologic Features and Clinical Course of Patients Infected With SARS-CoV-2 in Singapore

<https://jamanetwork.com/journals/jama/fullarticle/2762688>

Source: JAMA

Clinical Field: Other

Article Type: Clinical Report

Study Type: Retrospective Study

Patient Group: SARS-CoV-2 infected

Intervention: N/A

Reviewer	Stefan Jovinge
Study Design	Major Concerns
Study Design Concerns	Case series of 18 hospitalized patients with SARS-CoV-2.
Main Results	67% had signs/symptoms of upper respiratory tract infection. In 83% viral shedding was detected for > 7days. 50% had viruses detected in the stool. No detection of virus in urine
Comments	Very small series but previous experiences confirmed; men with co-morbidities and > 50 make up the majority of deaths.

siRNA Does *In Vitro* Prevent SARS-CoV-2 Infection of Cells. Could Be a Possible Treatment Strategy for SARS-CoV-2?

Article Title: Inhibition of SARS-Associated Coronavirus Infection and Replication by RNA Interference

www.ncbi.nlm.nih.gov/pubmed/14645307

Source: JAMA

Clinical Field: Infectious Disease

Article Type: Basic Science

Study Type: Other

Patient Group: In vitro study of SARS-CoV-1

Intervention: siRNA against critical part of the RNA genome

Reviewer	Stefan Jovinge
Study Design	Well Designed
Study Design Concerns	Cells were treated with the siRNA before infection. It would have been interesting if it would have been complemented with a time series of transfection after the cells were infected. Cells were monkey cells
Main Results	A certain si-
Comments	An old study showing feasibility of siRNA in prevention of the infection of cells by SARS-CoV-01. Could possibly be a strategy for SARS-CoV-2.

IBD Patients In Bergamo, Italy Seem Not To Be More Susceptible Top Being Infected With SARS-CoV-2 Despite Immunosuppression

Article Title: Uneventful course in IBD patients during SARS-CoV-2 outbreak in northern Italy

www.ncbi.nlm.nih.gov/pubmed/32247695

Source: Gastro

Clinical Field: Gastroenterology

Article Type: Clinical Study

Study Type: _____

Patient Group: IBD patients within an area severely hit by SARS-CoV-2

Intervention: N/A

Reviewer	Kathrine Ann Kelly-Schuette
Study Design	Minor concerns
Study Design Concerns	This is a single center observation study from February to March 2020 of patients with IBD (ulcerative colitis and crohn's disease.) Patients were not contacted. Patients followed by this clinic are able to communicate through a dedicated email or phone number. The assumption is that any complication from COVID-19 is promptly identified as all patients admitted to this hospital are swabbed for COVID-19. However, there is no admission to the hospital in this cohort of IBD patients.
Main Results	522 patients followed with a diagnosis of IBD. No patients underwent modification of treatment regimen and in the IBD cohort there were no cases of COVID-19. Only 22% of patients were being treated with biologic agents. During the same timeframe there were 479 patients without IBD admitted through the ED with COVID-19
Comments	Given the high percentage of undocumented cases and asymptomatic cases there may have been some patients with IBD that were not captured. There is a lack of evidence in this patient population, however more data is needed given their risk with immunosuppressive therapy.

A Detailed Study of Coronavirus (not SARS-CoV-2) Transmission Pattern in Michigan; Jan-Feb the worst, Only 2.5% During Jun - Sep.

Article Title: Coronavirus occurrence and transmission over 8 years in the HIVE cohort of households in Michigan

<https://academic.oup.com/jid/article/doi/10.1093/infdis/jiaa161/5815743>

Source: Journal of Infectious Disease

Clinical Field: Infectious Disease

Article Type: Clinical Report

Study Type: Other

Patient Group: Patients with Coronavirus in MI over 8 years

Intervention: N/A

Reviewer	Stefan Jovinge
Study Design	Minor Concerns
Study Design Concerns	Households receiving primary care from UoM primary health care. Households had to be of at least 4 and at least 2 below 18. Families self-reported cold symptoms. Respiratory specimens collected if symptoms: Thus study doesn't reflect minor symptom or asymptomatic infections that seems to be a significant portion of SARS-CoV-2 patients. Of course this study didn't involve SARS-CoV-2 which wasn't available at the time.
Main Results	Coronaviruses have a distinct dependency on the seasonal variations in Michigan. 2.5% of the positive samples for Coronavirus were sampled June - Sep. The peak months of positive samples were Jan - Feb. The co-infection within households varied between 7.2% - 12.6% between viruses.
Comments	Corona viruses have a distinct seasonal variation. However, the experience on the Southern Hemisphere SARS-CoV-2 might not be as dependent on that. Also since SARS-CoV-2 seems to have a significant pre-symptomatic transmission and that patients only with symptoms were sampled in this study the conclusions made from this be cautiously transferred to actions in this pandemic.