

Title of Paper	Journal	Pub. Date	Category	Article highlights	Problem/Background	Design	Groups, for clinical studies	Results
Ongoing Clinical Trials for the Management of the COVID-19 Pandemic	Trends in Pharmacological Sciences	Journal Pre-proof	Treatment	Summary for currently registered interventional clinical trials for the treatment and prevention of COVID-19	Summary and insights for global response to COVID-19 are lacking	Systematic review		Two tables summarizing clinical trials registered up to 3/20/20, describing their way of intervention, size, whether randomized, whether blinded, recruiting status, and country of origin. Trials for both treatments and preventions are included.
Level of IL-6 predicts respiratory failure in hospitalized symptomatic COVID-19 patients	medRxiv	4/4/20	Prognosis	Small, single-center study suggests moderately elevated IL-6 levels above 80pg/ml may be sufficient to identify COVID-19 patients with a high risk of respiratory failure.	Most individuals infected with COVID-19 are minimally symptomatic. However, some individuals develop severe disease progression. Here the authors investigate for variables that allow the prediction of patients with a high risk of respiratory failure and need of mechanical ventilation.	Cross-sectional study	40 individuals with RT-PCR-confirmed COVID-19	13/40 patients with COVID-19 progressed to requiring mechanical ventilation. Male sex, pulse, markers of inflammation, LDH and creatinine at admission were associated with respiratory failure. Elevated interleukin-6 (IL-6) was very strongly associated with the need for mechanical ventilation. In individuals for whom repeat IL-6 levels were available, the maximal IL-6 level was highly predictive of need for mechanical ventilation (AUC=0.98)
Clinical Manifestations of Children with COVID-19: a Systematic Review	medRxiv	4/3/20	Diagnosis & Prevention	Symptoms differ between pediatric cases and adults. Children are less likely to have fever, lymphopenia, or radiologic abnormalities	Review of how pediatric populations present with the condition	Systematic review	Articles included had patients less than 18 years old, cases of COVID-19 confirmed with RT-PCR, and descriptions of symptoms	Symptoms: 13.1% of children had lymphopenia, vs 96.1% of adults. The most prevalent symptom in children was fever (16.3%), followed by cough (14.4%), nasal symptoms (3.6%), diarrhea (2.7%) and nausea/vomiting (2.5%). One hundred forty-five (12.9%) children were diagnosed with pneumonia and 43 (3.8%) upper airway infections were reported. Computed tomography: Abnormalities were reported in 62.7% of cases. The most prevalent abnormalities reported were ground glass opacities, patchy shadows and consolidations. Overall: Children are typically asymptomatic or have mild disease, but are important in community spread. Some evidence that fecal virus shedding can continue for weeks after symptoms have ameliorated
Monitoring the COVID-19 epidemic in the context of widespread local transmission	Lancet Respir Med	4/2/20	Epidemiology	Monitoring of COVID-19 ICU cases and mortalities are the most reliable surveillance measures.	Given disparate testing, reporting, and criteria, how can spread of SARS-CoV-2 be monitored? How does this change when local infections become predominantly community spread?	Ideas, editorials, reviews or opinions		If 1) most severe COVID-19 cases are admitted to the hospital, 2) access to health service is good, 3) hospitals reports cases and deaths regularly, and 4) hospital admission criteria are broadly similar, then COVID-19 ICU admissions and mortality are good indicators of COVID-19 spread. These data should be interpreted with an understanding that hospital admissions occur on average 7 days after symptom onset and around 12 days after exposure.
A novel treatment approach to the novel coronavirus: an argument for the use of therapeutic plasma exchange for fulminant COVID-19	Critical Care	4/2/20	Legal, Ethics & Management	Total plasma exchange may be a treatment for the host response to COVID-19.	Host response to SARS-CoV-2 is emerging as an important contributor to the morbidity and mortality associated with COVID-19. Therapeutic plasma exchange can remove inflammatory cytokines, stabilize endothelial membranes, and reset hypercoagulable states.	Ideas, editorials, reviews or opinions		Total plasma exchange has been associated with decreased mortality in the setting of sepsis in multiple studies, including those with pneumonia at the etiology of the sepsis. The authors suggest considering total plasma exchange earlier in the disease course rather than as a rescue therapy.
Infection and Rapid Transmission of SARS-CoV-2 in Ferrets	Cell Host & Microbe	Journal Pre-proof	Biology	Infected ferrets show elevated body temperature and viral replication. Both direct and indirect transmissions seen between ferrets.	Animal model for SARS-CoV-2 infection and transmission is needed	Basic science		Ferrets with direct infection (6), direct contact (6), indirect contact (6), PBS control (6) were included in the study. Infected ferrets presented elevated body temperatures that went back to normal by 8 day-post-infection (dpi). Occasional cough and reduced activities detected, yet no body weight loss or fatalities. Viral RNA can be detected in nasal washes, saliva, fecal and urine samples before 8 dpi. After 12 dpi, high titers of neutralizing antibodies can be detected in direct infection and direct contact groups.

Neutralizing Antibodies against SARS-CoV-2 and Other Human Coronaviruses	Trends in Immunology	In Press	Treatment	Neutralizing antibodies (nAbs) may serve as a potential treatment option against SARS-CoV-2 infection and nAbs specific to other coronaviruses may also have cross-neutralizing activity against SARS-CoV-2.	Because there are no current vaccines or treatments against SARS-CoV-2, researchers are exploring other forms of treatment to slow the spread of the virus.	Ideas, editorials, reviews or opinions		nAbs target the various domains of the spike (s) protein, including the S1-RBD, S1-NTD, or the S2 region, in order to block RBD binding to host cell receptors or S2-mediated cell membrane fusion or entry into the host. While no current SARS-CoV-2 specific nAbs have been reported, there is a potential of cross-neutralizing activity from nAbs against SARS-CoV and MERS-CoV, but very few of these nAbs have gone to clinical trials, so vigorous testing of all nAbs would still be required.
Aerodynamic Characteristics and RNA Concentration of SARS-CoV-2 Aerosol in Wuhan Hospitals during COVID-19 Outbreak	bioRxiv	3/10/20	Biology	The virus aerosol deposition on protective apparel or floor surface and their subsequent resuspension is a potential transmission pathway	aerosol transmission of SARS-CoV-2 has been little studied	Basic science		1) RNA concentration of SARS-CoV-2 in aerosol: 19 copies m ⁻³ in patient mobile toilet room, 18-42 copies m ⁻³ in the Protective Apparel Removal Rooms (both in Fangcang hospital; viral copies in PARRs dropped with reduced staff and more stringent sanitization); over 3 copies m ⁻³ in crowd gathering sites (Renmin hospital). 2) Size of particles carrying viral RNA peak at 0.25-1µm in PPARs, and above 2.5µm in staff office. 3) Area normalized deposition rate inside ICU is between 31 - 113 copies m ⁻² hour ⁻¹ .
Transmission Potential of SARS-CoV-2 in Viral Shedding Observed at the University of Nebraska Medical Center	medRxiv	3/26/20	Epidemiology	In addition to direct transmission between person-to-person contact and droplets, evidence for indirect transmission through contaminated objects and airborne transmission was identified through testing for viral RNA. This may support airborne isolation protocols for COVID-19 patients. Personnel air samplers worn by sampling personnel were positive for viral RNA after only 20min in rooms with patients with mild-illness.	Should patients with COVID-19 be under droplet or airborne isolation protocols?	Basic science	13 SARS-CoV-2 confirmed patients at the University of Nebraska Medical Center	Between of 50% and 100% of surfaces in the rooms of SARS-CoV-2 positive patients were positive for viral RNA. Air samples taken from patients rooms were positive in 63.2% of samples. Air samples from the hallway outside the patients when sampling was conducted were also positive 66.7% of instances. Personal air samplers worn by sample collectors during collection were positive 100% of the time.
COVID-19 and diabetes	Diabetic Medicine	4/3/20	Legal, Ethics & Management	Diabetic patients are impacted by the virus in many ways. Not only does infection affect them more severely, the current hospital and medical care climate prevents diabetic patients from having easy access to necessary healthcare appointments and perscriptions.	The pandemic has impacted various aspects of healthcare for individuals with chronic conditions such as diabetes.	Ideas, editorials, reviews or opinions		Individuals with diabetes not only face increased risk of mortality from Covid-19, but their regular access to medical care becomes more difficult as well. As more appointments transition to online and face to face medical care is reduced, diabetic patients will feel that they have less support when needing advice and help accessing critical medication like insulin.
Detection of antibodies against SARS-CoV-2 in patients with COVID-19	J Medical Virology	4/3/20		In a small sample of patients from Wuhan, IgG and IgM titers appeared to trend down in association with improvement on CT. Further studies focusing on antibody detection will help profile the COVID-19 spectrum.	Do titers of SARS-CoV-2 antibodies map to progression of viral infection?	Cross-sectional study	Wuhan: n=60 patients at 6-7wk after onset	All patients tested positive for IgG against virus, 47 tested positive for IgM; IgG titers > IgM. In a subset, repeat titers at 1wk showed decrease, along with negative RNA tests and improvement on CT findings - suggesting antibody detection could act as indicator of the stage of COVID-19 progression.
Neutrophil-to-Lymphocyte ratio and Lymphocyte-to-C-reactive protein ratio in patients with severe coronavirus disease 2019 (COVID-19): A meta-analysis	J Medical Virology	4/3/20	Prognosis	In a meta-analysis of six studies from China, neutrophil-to-lymphocyte ratio was significantly increased in COVID-19 patients w/ severe disease while lymphocyte-to-C reactive protein ratio was significantly decreased.	Are the Neutrophil-to-Lymphocyte ratio and Lymphocyte-to-CRP ratio reliable predictors of clinical severity for coronavirus?	Meta-analysis	Six studies in China: n=828 patients; 407 patients had severe disease	The neutrophil-to-lymphocyte ratio values were found to increase significantly in COVID-19 patients with severe disease (SMD=2.404, 95% CI=0.98 to 3.82), while lymphocyte-to-CRP values were decreased significantly (SMD= -0.912, 95% CI= -1.275 to -0.550).

The Italian coronavirus disease 2019 outbreak: recommendations from clinical practice	Anaesthesia	3/27/20	Diagnosis & Prevention	- impact of covid19 on regional and national healthcare infrastructure - recommendations of clinical management, safe oxygen therapy; airway management; PPE; caring for diagnosed covid19 patients	No existing experiences and recommendations published during the Italian outbreak. To supplement clinical data from the Chinese outbreak.	Ideas, editorials, reviews or opinions	- mortality rate in Italy breakdown by age groups from outbreak onset to 16/03/2020 - summary of clinical aspects of covid19 patients during Italian outbreak - potential higher risk of transmission and poor response of non-invasive ventilation make it a less favorable option than invasive ventilation at oxygen administration - cognitive aids are strongly recommended to maintain airway management - effective pre-oxygenation is highly recommended for covid-19 patients before rapid sequence intubation, please refer to paper for detailed discussion of Tracheal intubation for covid19 patients - other considerations concerning space management, team management and PPE management
Behavioral and Emotional Disorders in Children during the COVID-19 Epidemic	The journal of pediatrics	4/3/20	Legal, Ethics & Management	commentary by China-EPA-UNEPSA working group to raise awareness of children's psychological needs during epidemics	raise awareness of children's psychological needs during epidemics emphasizing the role of families and caregivers in the timely recognition and management of negative emotions	Ideas, editorials, reviews or opinions	- younger age group (3-6 yrs) more likely than older children to manifest symptoms, such as clinginess and fear that family members could contract the infection - children ages 6-18 more likely to show inattention and persistent inquiry - parents are suggestioned to pay attention to sleep difficulties
Abdominal and testicular pain: An atypical presentation of COVID19	The American Journal of Emergency Medicine	03/31/20	Prognosis	Case report of a man referred to the ED for abdominal and testicular pain and subsequently tested positive for covid19.	Inadequate studies and understandings on asymptomatic and atypical presentations of covid19 patients. Raise awareness of updated patient and health care worker management of individuals outside of "flu-like symptoms"	Case reports/series	- 42 yr male referred to the ED for evaluation of 8 days of abdominal, testicular, and back pain - patient described symptoms as a constant stabbing pain originated from his groin and migrated to his abdomen, flank, back, and chest - denied any rhinorrhea, sore throat, cough, shortness of breath, nausea or vomiting - On arrival, patient was afebrile and hemodynamically stable. Physical exams revealed diffuse abdominal tenderness without guarding or rebound, the remainder otherwise normal. Blood laboratory values benign, chest radiograph revealed no abnormal findings.

These summaries were prepared by medical and graduate students at Washington University in St. Louis

Please note that medRxiv and bioRxiv articles have not yet been peer-reviewed.

All WashU Med faculty/staff currently have free remote access to full-text literature via their WUSTL Key at login.beckerproxy.wustl.edu/login