News and Views

Most People can Produce Neutralizing Antibodies Against SARS-CoV-2

A study published in *PLOS Pathogens* has stated that a large number of people have the potential to produce neutralizing antibodies against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in severe cases of coronavirus disease 2019 (COVID-19).

The study also supports the use of combination antibody therapy for the prevention and treatment of COVID-19. Michael Mor of Tel Aviv University, and colleagues made use of molecular and bioinformatics techniques and compared B-cell responses among 8 patients with severe COVID-19 and 10 patients with mild symptoms, 1.5 months following infection. Patients who were very ill had higher concentrations of receptor-binding domain (RBD)-specific antibodies as well as raised B-cell expansion. Twenty-two antibodies were cloned from two patients. Of these, 6 were found to have potent neutralization against SARS-CoV-2. It appears that most people can produce neutralizing antibodies against SARS-CoV-2 in severe cases of the disease… (*ET Healthworld*)

COVID Clot Prevention: Early Prophylactic Anticoagulation

A new study suggests that starting heparin prophylaxis within 24 hours of hospital admission for COVID-19 was tied to considerably better outcomes.

Investigators noted that starting anticoagulation early was linked with 27% lower relative risk of 30-day mortality compared to no anticoagulation (14.3% vs. 18.7%, hazard ratio [HR] 0.73, 95% confidence interval [CI] 0.66-0.81). Preventive heparin use was associated with similar positive outcomes for inpatient mortality (HR 0.69, 95% CI 0.61-0.77) and initiation of therapeutic anticoagulation (HR 0.81, 95% CI 0.73-0.90). Additionally, early prophylaxis was not linked with increased risk of bleeding that needed transfusion (HR 0.87, 95% CI 0.71-1.05). The study included 4,297 patients admitted to Veterans Affairs (VA) hospitals between March 1 and July 31, 2020, with confirmed severe COVID-19 and no history of anticoagulation. The findings are published in *The BMJ*… (*Medpage Today*)

Inhaled Hyaluronan may Help COPD Patients

Aerosolized high-molecular-weight hyaluronan (HMW-HA) appears to improve acute exacerbations of chronic obstructive pulmonary disease (COPD), suggests a new study.

In comparison with placebo, HMW-HA was found to be linked with a significantly shorter duration of noninvasive positive-pressure ventilation (NIPPV), lower systemic inflammatory markers and decreased measured peak airway pressure.

Researchers looked at 44 patients with a history of acute exacerbations of COPD requiring NIPPV. Three patients were excluded owing to heart failure. Twenty patients were given HMW-HA while 21 received placebo in association with NIPPV and standard medical therapy. Patients given HMW-HA were free from NIPPV sooner than those who were given placebo (mean, 5.2 vs. 6.4 days; $p < 0.037$). Patients given HMW-HA also had significantly shorter hospital stay compared to those in the placebo group (mean, 7.2 vs. 10.2 days; $p = 0.039$)… (*Medscape*)

Acute Malnutrition Estimated to Affect 2.3 Million Children Under 5 in Yemen in 2021

It is estimated that around 2.3 million children below 5 years of age in Yemen will likely suffer from acute malnutrition in 2021, warn four United Nations agencies.

Overall, 400,000 among these are estimated to have severe acute malnutrition and could even die if urgent treatment is not provided. These numbers represent an increase in acute malnutrition and severe acute malnutrition of 16% and 22%, respectively, among children under 5 years of age in comparison with 2020. The data come from the Integrated Food Security Phase Classification (IPC) Acute Malnutrition report that has been released by the Food and Agriculture Organization of the United Nations (FAO), UNICEF (the United Nations Children's Fund), the World Food Programme (WFP), the World Health Organization (WHO) and partners… (*WHO*)

Wide Variability in Blood Glucose Tied to More CVD in Diabetes Patients

Patients with type 2 diabetes with the highest variability in A1c levels over a period of 2 years were found to have significantly more first cardiovascular disease (CVD) events compared to similar patients with less A1c variability, reported a retrospective analysis of over 29,000 US patients.

Patients in the quartile with the greatest level of A1c variability were shown to have a 59% higher rate of CVD events, in comparison with patients in the quartile with the lowest level of A1c variability. Every 1 unit rise in A1c standard deviation was tied to a significant 18% increase in CVD events after adjusting for confounders. The results were published in *Diabetes Obesity and Metabolism*… (*Medscape*)

US CDC Issues Guidance for Reopening of Schools

The US Centers for Disease Control and Prevention (CDC) has issued new guidance for reopening of US schools. The agency recommends universal wearing of masks and physical distancing as important strategies to control COVID-19.

The guidelines also stress on facility cleaning, personal hygiene as well as contact tracing. CDC Director Rochelle Walensky stated that with the strategies suggested by the agency, there will be little to no transmission of COVID-19 in schools, if followed properly. The agency also recommended that priority should be given to teachers and school staff for COVID-19 vaccination.

US President Joe Biden had also assured that most K-8 schools would be reopened within 100 days of his taking office on January 20. The President lauded the agency's new guidance as he highlighted the problems faced by children due to school closure… (*Reuters*)

COVID Antibodies may Last for 8 Months After Vaccination, Says AIIMS Director

The Director of All India Institute of Medical Sciences (AIIMS) has stated that antibodies against the SARS-CoV-2 virus may last for up to 8 months or even longer following vaccination against COVID-19.

He further stated that scientists are exploring the long-term protection provided by the vaccines. He mentioned that antibodies will develop around 14 days following the second dose of the vaccine, adding that while it was not clearly known as to how long the protection will last, but it is believed to last for a duration of at least 8 months, or longer… (*ET Healthworld – IANS*)

Alien Cells may Account for COVID 'Brain Fog'

New research suggests that the long-term neurologic symptoms, such as brain fog, that some patients with COVID-19 experience, may occur as a result of the occlusion of brain capillaries by large megakaryocytes.

The findings, shared in a research letter, report on 5 post-mortem cases from patients who succumbed to COVID-19. Researchers noted large cells that resembled megakaryocytes in cortical capillaries. Immunohistochemistry validated that they were megakaryocytes. According to the researchers, megakaryocytes have not been seen in the brain previously. The report was published online in *JAMA Neurology*.

Lead author David Nauen noted these cells in the first evaluation of brain tissue from a COVID-19 patient. He found no viral encephalitis, but there were unusually large cells in the brain capillaries. He stated that he had never seen these cells in the brain before… (*Medscape*)

High Rates of Anxiety among Physician Mothers

A new report suggests that physician mothers are reporting increased rates of moderate-to-severe anxiety during the COVID-19 crisis. Among them, frontline workers and informal caregivers have the highest rates of anxiety.

A survey was conducted among the Physician Moms Group on Facebook. Among over 1,800 respondents, around 41% of them had scores above the Generalized Anxiety Disorder 7-item scale (GAD-7) cut-off for moderate-to-severe anxiety. Additionally, 18% were found to have severe anxiety. Frontline workers and informal caregivers had higher anxiety levels. About 46% of them scored on the higher end of the GAD-7. The data is published in the *American Journal of Psychiatry*… (*Medpage Today*)

Drug to Reduce Bone Marrow Suppression due to Chemotherapy Approved

Trilaciclib became the first drug in its class to be approved by the US FDA for reducing the incidence of chemotherapy-induced bone marrow suppression in patients being given chemotherapy for extensive-stage small cell lung cancer.

The drug may provide protection to the bone marrow cells against damage from chemotherapy by inhibition of cyclin-dependent kinase 4/6.

Three randomized, double-blind, placebo-controlled trials conducted in patients with extensive-stage small cell lung cancer randomized a total of 245 patients to either trilaciclib or a placebo prior to chemotherapy. Patients given trilaciclib were found to have reduced odds of having severe neutropenia in comparison with patients receiving a placebo. Among the patients who had severe neutropenia, those on trilaciclib treatment had it for a shorter duration on average, compared to patients who received a placebo… (*FDA*)

Humidity from Masks may Decrease Severity of COVID-19

A study, published in the *Biophysical Journal*, led by researchers at the NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), has noted that face masks considerably increase the humidity in the air that a person wearing the mask breathes in.

According to the investigators, this higher level of humidity in the inhaled air could possibly explain why wearing mask is tied to lower disease severity in those infected with COVID-19. Of note, hydration of the respiratory tract is beneficial for the immune system. High levels of humidity can potentially decrease the spread of a virus to the lungs by means of promoting mucociliary clearance (MCC)… (*HT – ANI*)

New SOPs Issued for Offices to Curb the Spread of Coronavirus

The Union Health Ministry has released a set of new "SOPs to contain the spread of COVID-19 in offices".

The SOPs suggest that if one or two cases of COVID-19 are reported at a workplace, the disinfection can be limited to the areas occupied and visited by the patient over the previous 48 hours. Work can resume following disinfection procedure according to the stated protocols. The ministry added that in case of a large number of cases at a workplace, the entire block or building need to be disinfected prior to resuming work. Staff residing in containment zones must inform their supervisors about the same and not report to the workplace until the containment zone is denotified. These staff should be allowed to work from home… (*ET Healthworld – PTI*)

Pfizer-BioNTech COVID-19 Vaccine Decreases Symptomatic Infection in Real World: Israeli Researchers

Researchers from Israel suggest that the Pfizer-BioNTech COVID-19 vaccine seems to decrease symptomatic COVID-19 infections by over 90% in the real world.

Preliminary findings indicate that the vaccine is highly effective in a mass vaccination campaign. The Clalit Research Institute looked at data on 1.2 million people; nearly half of these received the Pfizer-BioNTech vaccine. Patients receiving the vaccine were compared with those who didn't. The rate of symptomatic COVID-19 was found to reduce by 94% among those who were given two doses of the vaccine. Additionally, the rate of serious illness was found to be reduced by 92%.

The findings are in line with data obtained from Pfizer's vaccine trial, which stated that the vaccine yielded 95% protection against symptomatic COVID-19… (*CNN*)

Younger People Half as Likely as Adults to Contract COVID-19: Study

A new modeling study has shown that individuals below the age of 20 years have about half the odds of contracting COVID-19 infection, compared to adults. These individuals also have lesser odds of transmitting the disease to others.

The study looked at 637 households whose members had undergone polymerase chain reaction (PCR) testing in spring last year. Some of them also underwent serology testing for antibodies to SARS-CoV-2. It was noted that those below 20 had 43% lesser susceptibility to COVID-19 as compared to those above 20. Children appeared to have greater odds of getting a negative PCR result in spite of being infected. This could probably account for the reports from across the globe that lesser number of children are diagnosed in comparison with adults.

The findings are published in the journal *PLOS Computational Biology*… (*NDTV – PTI*)

About One-third of People with Mild COVID-19 have Symptoms Months Later: Study

A study published in *JAMA Network Open* assessed 177 people with confirmed COVID-19 infection for a period of up to 9 months. The study group included 150 outpatients with mild COVID-19 who were not hospitalized.

Researchers from the University of Washington noted that 30% of the respondents had persistent symptoms, the most common being fatigue and loss of smell or taste. Over 30% of the study respondents reported worse quality of life in comparison with that prior to falling ill. Additionally, 14 subjects (8%), including 9 who had not been hospitalized, had trouble performing at least one usual activity, like daily chores… (*CNN*)

Short Sleep Tied to Incident Dementia and All-cause Mortality

Novel evidence links sleep deficiency, dementia and mortality.

A new study included 2,812 adults, 65 years of age and older, from the National Health and Aging Trends Study (NHATS). The study subjects completed surveys about sleep disturbance and duration in 2013 and 2014. Investigators assessed the link between sleep

disturbance and deficiency and incident dementia and all-cause mortality over a period of 5 years. Fully adjusted Cox multivariate analysis revealed that subjects who slept 5 hours or less per night had about double the risk for incident dementia compared to those who slept longer (HR, 2.04). The risk of dementia was found to be higher among those who took 30 minutes or longer to fall asleep (HR, 1.45). The findings are published in *Aging*… (*Medscape*)

WHO Update on New Molecular Assays for Diagnosis of TB and Drug Resistance

The WHO has announced vital updates on new molecular assays in a Rapid Communication, which is expected to result in significant improvements in the diagnosis of tuberculosis (TB) and drug resistance among adults, adolescents as well as children.

A meeting of a Guideline Development Group was convened in December 2020 to update WHO policies on molecular assays employed for the diagnosis of TB and drug resistance. The evidence reviewed and presented in the Rapid Communication point to high diagnostic accuracy for 3 new technologies, including moderate complexity automated Nucleic Acid Amplification Tests (NAATs), to detect TB and resistance to rifampicin and isoniazid; low complexity automated NAATs to identify resistance to isoniazid and second-line anti-TB agents; and high complexity hybridization-based NAATs to detect resistance to pyrazinamide… (*WHO*)

Pulse Oximeters not to be used to Diagnose COVID-19: US FDA

The US FDA has cautioned that pulse oximeters should not be used to diagnose COVID-19. The devices could give inaccurate readings under some situations, stated the agency.

The WHO had included the use of pulse oximeter to detect patients who may require hospitalization in its clinical advice for treating COVID-19 in the month of January. The FDA has stated that the devices cannot be used to diagnose or exclude COVID-19. The agency further recommended not to depend on them to evaluate health. The agency recommended that attention should be focused on other indicators of low oxygen, including blueness of the face or a rapid pulse… (*Reuters*)

It is Unlikely That Food and Food Packaging Spread COVID-19

It is highly unlikely that food and food packaging can spread COVID-19, stated the US FDA, US Department of Agriculture and the CDC.

An FDA statement mentioned that available information and international scientific consensus support that foods that people consume and food packaging they touch are highly unlikely to spread COVID-19 infection. The agencies emphasized that there was a dearth of reliable evidence that could suggest that food or food packaging can transmit SARS-CoV-2. The FDA added that the amount of virus particles that could be picked up through touching a surface would be very small while the amount that is required to cause infection by means of oral inhalation would be very high. Therefore, the odds of catching infection by touching the surface of food packaging or eating food appear to be very low… (*CNN*)

A Third of Patients Recovered from COVID may have PTSD

A single-center study in Italy has shown that nearly 30% of the patients who recovered from COVID-19 developed post-traumatic stress disorder (PTSD).

Overall, 381 patients were followed. Women were more likely to develop PTSD (55.7%). Those who went on to develop PTSD had higher rates of history of psychiatric disorder (34.8%), and had higher odds of having had delirium or agitation during acute illness (16.5%). These patients were also reported to have more persistent medical symptoms following their initial illness (62.6%). Besides PTSD, it was noted that 17.3% had depressive episodes and 7% had generalized anxiety disorder. The study is published in *JAMA Psychiatry*… (*Medpage Today*)

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