

## News and Views

### Coronavirus Vaccine Unlikely in Public Before Fall of 2021, Say Experts

An effective vaccine is unlikely to be available for the general public before the fall of 2021, stated experts working in the field of vaccine development.

Researchers at McGill University in Canada conducted a survey among 28 experts working in vaccinology in late June 2020. The majority of these experts were Canadian or American academics with an average of 25 years of experience working in the field. Jonathan Kimmelman, a professor at McGill University, said that the experts offered forecasts on vaccine development that appeared less optimistic than the timeline of early 2021 given by US public officials. Kimmelman, the senior author on the paper published in the *Journal of General Internal Medicine*, stated, "In general, they seem to believe that a publicly available vaccine next summer is the best-case scenario with the possibility that it may take until 2022." (*Deccan Chronicle – PTI*)

### COVID-19 Vaccine Roll-out Expected in Britain in Less Than 3 Months: The Times

A mass roll-out of a coronavirus disease 2019 (COVID-19) vaccine in the UK could be finished within 3 months' time, reported *The Times*, while citing government scientists.

The newspaper stated that scientists working on the Oxford vaccine are hopeful that the regulators will approve it before the beginning of 2021. *The Times* further reported that a full COVID-19 immunization program would exclude children and could be quicker than predicted earlier. Health officials estimate it is possible that every adult could receive a vaccine dose within 6 months. The European Medicines Agency (EMA) has also stated that it is reviewing data on AstraZeneca and Oxford University's potential COVID-19 vaccine, in real time... (*Reuters*)

### Drug Combination for Treating Mesothelioma Receives FDA Approval

The US Food and Drug Administration (FDA) has granted approval to nivolumab, in combination with ipilimumab, for the first-line treatment of adults with malignant pleural mesothelioma, which cannot be removed surgically.

This is the first drug regimen that has been granted approval for mesothelioma in 16 years' time and the second FDA-approved systemic therapy for mesothelioma. Both the agents are monoclonal antibodies that, in combination, tend to diminish tumor growth by enhancing T-cell function.

This combination was assessed in a randomized, open-label trial in 605 patients with previously untreated unresectable malignant pleural mesothelioma. Patients receiving the combination therapy survived a median of 18.1 months, while those undergoing chemotherapy survived a median of 14.1 months... (*FDA*)

### Reliance Develops RT-PCR Kit That can Give Results in 2 Hours

Reliance Life Sciences has developed a reverse transcription polymerase chain reaction (RT-PCR) kit to test for COVID-19 that may provide results in about 2 hours, stated company sources.

Presently, COVID-19 RT-PCR test, a real-time RT-PCR (rRT-PCR) test, used for the qualitative detection of nucleic acid from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), takes about 24 hours to provide the results.

Computational biologists at Reliance Life Sciences assessed over 100 genomes of SARS-CoV-2 sequenced in India and designed unique RT-PCR primers to develop a quantitative-rRT-PCR kit for the detection of COVID-19. The Indian Council of Medical Research (ICMR) has technically validated the kit for satisfactory performance, stated sources. ICMR's validation process does not approve or disapprove the kit design and it does not confirm user-friendliness. According to ICMR results, the kit has a 98.7% sensitivity and 98.8% specificity... (*ET Healthworld – PTI*)

### Unique Patterns in COVID-19 Transmission Identified in India

New Delhi: Researchers, including those from the Government of Tamil Nadu, and Andhra Pradesh, carried out one of the largest analyses of COVID-19 epidemiology till today, and noted that both cases and deaths due to the viral illness have been highly concentrated in the 40- to 69-year age group in India as compared to that seen in high-income countries, among other trends.

The study explored the disease transmission patterns in 5,75,071 individuals exposed to 84,965 confirmed cases of COVID-19 in the two states on the basis of data collected by thousands of contact tracers. The scientists noted that both cases and deaths across the two Indian states were concentrated in younger cohorts than expected from observations in higher-income countries.

Follow-up testing of exposed contacts also suggested that 70% of infected individuals did not infect any of their contacts, while 8% of positive patients accounted for 60% of observed new infections. The study is published in the journal *Science...* (*ET Healthworld – PTI*)

### **COVID-19: Delirium a Key Symptom in Frail Older People**

Confusion or strange behavior in frail older people could be an early warning sign of COVID-19, suggests new research.

The King's College London study assessed data from over 800 people over the age of 65. It included 322 patients in hospital with COVID-19, and 535 people using the COVID Symptom Study app to record their symptoms or log health reports on behalf of friends and family. All had a positive test result. Older adults admitted to hospital, classified as frail, had higher odds of having had delirium as one of their symptoms, compared to people of the same age who weren't frail. For 1 in 5 patients in hospital with COVID-19, delirium was their only symptom. Among the 65 plus people using the app, delirium was more common in frailer people with COVID-19 compared to those of the same age with the infection, who were more robust... (*BBC*)

### **Oxford to Study Adalimumab as COVID-19 Treatment**

London: Oxford University has stated it would study if adalimumab, a type of anti-inflammatory known as an anti-tumor necrosis factor (anti-TNF) drug, was an effective treatment option for COVID-19 patients.

Evidence indicates that COVID-19 patients already taking anti-TNF drugs for inflammatory bowel disease and inflammatory arthritis have a reduced likelihood of being admitted to hospital, said Oxford. The trial, called AVID-CC, will be aimed at treating people in the community, especially in care homes and will enrol up to 750 patients from community care settings throughout Britain. The drug is presently used to treat conditions like rheumatoid arthritis, Crohn's disease, ulcerative colitis and psoriasis... (*NDTV – Reuters*)

### **Patients with Psychiatric Disorders at Higher Risk of COVID-19 Death**

Patients with mental illness have a higher risk for severe COVID-19 outcomes compared to the general population, reported a study from a large hospital system.

Of 1,685 hospitalized COVID-19 patients, those with a prior psychiatric diagnosis had a significantly higher risk of death compared to patients without a diagnosis, after controlling for demographic characteristics, comorbidities and hospital location (hazard ratio [HR] 1.5, 95% confidence interval [CI] 1.1-1.9,  $p = 0.003$ ), reported researchers in *JAMA Network Open*. The risk was found to be higher among patients with a psychiatric diagnosis at 2 weeks after their index hospitalization (35.7% vs. 14.7%), at 3 weeks (40.9% vs. 22.2%) and 4 weeks (44.8% vs. 31.5%)... (*Medpage Today*)

### **Stroke may be First Symptom of COVID-19 in Younger Patients**

According to a new study, published online in *Neurology*, stroke may be the first presenting symptom of COVID-19 in younger patients.

A meta-analysis was conducted of data from 160 patients with COVID-19 and stroke, and noted that nearly half of patients below the age of 50 were asymptomatic at the time of stroke onset. Although younger patients had the highest risk of stroke, the highest risk of death was seen among patients who were older, had other chronic conditions, and had more severe COVID-19-associated respiratory symptoms. Among patients below 50, many were completely asymptomatic when they had a stroke related to COVID-19, thus suggesting that for these patients, stroke was their first symptom of the disease... (*Medscape*)

### **Menopausal Symptoms Linked with Cardiovascular Risk**

Analysis of data from the Women's Health Initiative CaD (Calcium and Vitamin D) trial has revealed that women with greater menopausal symptoms experienced higher risk of cardiovascular illness.

Women having two or more moderate-to-severe menopausal symptoms were found to have higher rates of stroke (HR 1.40, 95% CI 1.04-1.89) and cardiovascular disease (HR 1.35, 95% CI 1.18-1.54), reported researchers in a presentation at the North American Menopause Society 2020 virtual meeting. The investigators also revealed that calcium and vitamin D supplements did not decrease the risk of adverse health outcomes

in this patient population. More moderate or severe menopausal symptoms were tied to more cardiovascular disease and stroke... (*Medpage Today*)

### Orthopedic Problems in Children could be First Indication of Acute Lymphoblastic Leukemia

The diagnosis of acute lymphoblastic leukemia (ALL) can be delayed due to vague presentation and normal hematological results. However, orthopedic manifestations could be the primary presentation of ALL to physicians, and these symptoms in children should raise suspicion, even in the absence of hematological abnormalities, suggests a report published in the *Journal of Orthopaedics*.

The study retrospectively evaluated 250 consecutive ALL patients at a single institution to ascertain the frequency of ALL cases presented to the orthopedic department and to establish the number of these patients presenting with normal hematological results. Around 8.8% of the patients (22/250) presented primarily to the orthopedic department (4 with vertebral compression fractures, 12 with joint pain, and 6 with bone pain), and were later diagnosed with ALL. Six of these 22 patients (27.3%) had a normal peripheral blood smear, reported researchers... (*Medscape*)

### New COVID-19 Syndrome in Adults Similar to MIS-C in Kids: CDC

Researchers with the US Centers for Disease Control and Prevention (CDC) have stated that adults can sometimes develop dangerous symptoms that are similar to a coronavirus-linked syndrome in children.

The researchers have termed it multisystem inflammatory syndrome in adults or MIS-A, and suggest that it resembles the multisystem inflammatory syndrome in children or MIS-C. Similar to MIS-C, MIS-A does not show an obvious link to coronavirus and patients may not show any other symptoms that would suggest COVID-19 infection. MIS-A has killed at least 3 patients and disproportionately affects racial and ethnic minorities, stated CDC researchers.

Researchers described the cases of 27 adults, 21-50 years of age, with similar syndromes. Most of them had extreme inflammation in the body and organ malfunction, such as the heart, liver and kidneys, but sparing the lungs. "Although hyperinflammation and extrapulmonary organ dysfunction have been described in hospitalized adults with severe COVID-19, these conditions are generally accompanied by respiratory failure," researchers noted in the CDC's weekly report, the *MMWR*... (*CNN*)

### Study Says Nitric Oxide Possible Treatment for COVID-19

Sweden: Researchers at Uppsala University have noted that an effective way of treating the coronavirus that caused the 2003 SARS epidemic also works on the SARS-CoV-2 virus. The substance is nitric oxide (NO), a compound that has antiviral properties and is produced by the body itself.

According to Åke Lundkvist, a professor at Uppsala University, who led the study, NO appears to be the only substance shown to have a direct effect on SARS-CoV-2.

Researchers from Uppsala University and Karolinska Institute investigated how SARS-CoV-2 reacts to the compound. S-Nitroso-N-acetylpenicillamine (SNAP) was shown to exert a clear antiviral effect on this virus and the effect grew stronger as the dose was increased. The study is published in the journal *Redox Biology*. Lundkvist stated that until a vaccine is developed, inhalation of NO might be an effective treatment... (*ET Healthworld*)

### Moderna COVID-19 Vaccine Appears Safe in Older Adults

An early safety study of Moderna Inc's COVID-19 vaccine candidate among older adults revealed that virus-neutralizing antibodies were produced at levels similar to those seen in younger adults. The side effects were roughly comparable to high-dose flu shots, stated researchers.

The study, published in the *New England Journal of Medicine*, was an extension of the Phase I safety trial, first conducted in 18- to 55-year olds. Two doses of Moderna's vaccine - 25 µg and 100 µg - were tested in 40 adults aged 56 to 70 and 71 and older.

Among older adults given two injections of the 100 µg dose 28 days apart, the vaccine evoked immune responses that more or less conform to those seen in younger adults... (*Reuters*)

### 7.1% of Adults Exposed to COVID by August: India's Second National Sero-survey

New Delhi: Nearly 7.1% of India's adults (aged 18 and above) were exposed to the coronavirus by the end of August, suggest the results of the second national sero-survey, conducted by ICMR from August 17 through September 22.

This represents an enormous rise from the 0.73% logged in the first survey, conducted across the same

700 villages and urban wards as the second, from May 11 through June 4. However, the findings of the second sero-survey indicate that a considerable section of the population has still not been exposed to the virus and continues to be at risk of infection. The sero-survey revealed that only 1 in 15 people (aged 10 and above) had likely been exposed to the virus by the end of August. The risk of infection was two-fold in slums in comparison with non-slum areas of urban centers, and four times higher than rural areas... (NDTV)

### **Povidone-iodine Gargle: A Prophylactic Measure to Impede COVID-19 Transmission**

Coronavirus disease 2019 or COVID-19, caused by the SARS-CoV-2 virus, has crossed the 33 million case mark across the world, with the death toll surpassing 1 million (as on September 28, 2020).<sup>1</sup>

Human-to-human transmission occurs through close contact with an infected person. Infection can also occur from surfaces contaminated with droplets or secretions. Respiratory pathogens adhere to the oropharyngeal mucosa and colonize and cause upper respiratory tract infection (URTI).<sup>2</sup>

Given the fact that COVID-19 is transmitted through respiratory droplets, it is reasonable to evaluate if the use of a prophylactic mouth rinse with virucidal activity can impede the spread of infection.

Povidone-iodine (PVP-I) products, as mouthwashes and throat sprays, have been shown to have a prophylactic effect on the transmission of SARS-CoV during previous outbreak. PVP-I products were shown to have strong virucidal activity against SARS-CoV.<sup>3</sup>

SARS-CoV-2 virus is closely related to SARS-CoV, and the viral load in the oropharynx in asymptomatic patients with SARS-CoV-2 infection appears to be as high as that in symptomatic patients.<sup>4</sup>

Reducing the viral load in the oropharynx with adequate oral prophylactic measures seems worth exploring.

A study assessed nasal and oral antiseptic formulations of PVP-I for virucidal activity against SARS-CoV-2. PVP-I nasal and oral rinse formulations from 1% to 5% concentrations as well as controls were evaluated for virucidal potential. SARS-CoV-2 was exposed to the test compound for 60 seconds. All the tested concentrations of nasal and oral rinse formulations could completely inactivate the SARS-CoV-2 virus. Nasal and oral PVP-I formulations were thus shown to inactivate the SARS-CoV-2 virus at different concentrations. Nasal and oral decontamination with PVP-I formulations thus

seem to have potential in limiting the transmission of SARS-CoV-2.<sup>5</sup>

PVP-I mouthwash or gargle thus appears to be a promising approach to inactivate the virus, thus checking the spread of COVID-19.

### **References**

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### **Regeneron Says Its COVID-19 Treatment Reduces Viral Levels**

Regeneron Pharmaceuticals Inc has stated that its experimental two-antibody cocktail reduced viral levels and improved symptoms among non-hospitalized COVID-19 patients, thus improving its odds of becoming a treatment for COVID-19 disease.

Regeneron Chief Scientific Officer, George Yancopoulos, stated that they hope that these data will support an emergency use authorization (EUA) from the US FDA. The treatment, called REGN-CoV2, is also under investigation for use in hospitalized patients, and for prevention of infection in individuals who have been exposed to COVID-19. The treatment could help patients whose own immune system is not strong enough to fight the virus, mentioned Regeneron... (*ET Healthworld – Reuters*)

### **Chronic PPI Use Linked to Diabetes Risk**

According to new research, regular use of proton pump inhibitors (PPIs) is associated with modest duration-dependent risk for developing type 2 diabetes.

In a prospective study of three large US cohorts, and in more than 2,127,471 person-years of follow-up, 10,105 incident cases of diabetes were noted, with regular PPI

users, having a HR of 1.24 (95% CI 1.117-1.31) compared to nonusers, reported researchers. As the duration of PPI use increased, fully adjusted HRs increased to 1.05 (95% CI 0.93-1.19) for >0 to 2 years of use and 1.26 (95% CI 1.18-1.35) for >2 years, in comparison with no PPI use, stated the investigators in *Gut*. The authors stated that caution should be exercised while prescribing PPIs, especially for long-term use... (*Medpage Today*)

### COVID-19: ECMO Survival Rate Reasonable

Most of the patients who need extracorporeal membrane oxygenation (ECMO) for severe COVID-19 survive, suggested an international registry.

The estimated 90-day in-hospital mortality was 37.4%, while mortality among those who completed their hospitalization (final disposition of death or discharge) was 39%. The data obtained from 213 hospitals across the world provide a generalized estimate of ECMO mortality in COVID-19, reported researchers in *The Lancet*. The data were also presented at the virtual Extracorporeal Life Support Organization meeting.

The study included 1,035 patients, 16 years and older, with confirmed COVID-19 who had ECMO support initiated from January 16 through May 1, 2020, at 213 hospitals in 36 countries. Independent predictors of mortality in ECMO-supported patients with COVID-19 included age, immunocompromised state, pre-ECMO cardiac arrest, chronic respiratory disease, hypoxemia degree, acute kidney injury and use of ECMO for temporary circulatory support (venoarterial rather than venovenous ECMO support) ... (*Medpage Today*)

### Introducing Wheat Early may Help Prevent Celiac Disease

Very early introduction of high-dose gluten was shown to be linked with a reduced prevalence of celiac disease at 3 years of age in a pre-specified secondary analysis from the Enquiring About Tolerance (EAT) infant food allergy prevention trial.

None of the infants randomized to the gluten early introduction group of the study developed celiac disease by 3 years of age, compared to 1.4% of children for whom exclusive breastfeeding was recommended for at least the initial 6 months of life (risk difference 1.4% points, 95% CI 0.6-2.6;  $p = 0.02$ ). The researchers suggest that new randomized clinical trials are required to look into the question of whether early introduction of high-dose gluten is effective for the prevention of celiac disease. The findings were published in *JAMA Pediatrics*... (*Medpage Today*)

### In Patients with *H. pylori*, Higher-dose PPIs may Promote Gastric Intestinal Metaplasia

Among patients positive for *Helicobacter pylori* (*H. pylori*), upper quartiles of cumulative PPI doses had a significant association with precancerous gastric intestinal metaplasia (GIM) in a dose-dependent manner, reported a large retrospective study.

Upper quartiles of PPI use were also tied to a 5- to 10-times greater risk for a diagnosis of GIM with low-grade dysplasia, reported researchers in the *United European Journal of Gastroenterology*. The association of cumulative PPI use with the odds of GIM diagnosis depended on *H. pylori* status, ranging from 1.7- to 1.4-fold for patients treated for *H. pylori* infection compared to a nonsignificant association for *H. pylori*-negative patients. The researchers stated that healthcare professionals must consider evaluating the patients' *H. pylori* infection status before starting long-term PPI... (*Medpage Today*)

### Metabolic Blood Biomarkers may Help Distinguish Depression from Anxiety

According to a new study presented at the virtual 33rd European College of Neuropsychopharmacology (ECNP) Congress, metabolic alterations linked to inflammation and lipid metabolism can help differentiate depression from anxiety and ascertain disease severity.

A Dutch study included 1,400 individuals with anxiety, depression or both, 800 with remitted mood disorders and more than 630 healthy controls. Those with depression were found to have more inflammation, which was not found in those with anxiety. Individuals with depression had very different amounts and types of lipid in their blood. For instance, the group had high levels of triglycerides but lower levels of omega-3 fatty acids. Furthermore, having more of a lipid associated with depression was tied to a more severe form of depression... (*Medscape*)

### A COVID-19 Vaccine won't Eliminate the Need for Masks and Public Health Measures, Says Expert

Dr Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases, said that even an effective COVID-19 vaccine won't be able to replace the need for other public health measures, including wearing a mask, washing hands and practicing social distancing.

According to Fauci, the vaccine will not be 100% effective and taken by 100% of the population, thus leaving room for COVID-19 to spread. He added that

there is good amount of data to suggest that aerosol transmission does occur. This means that the virus can stay in the air for a period of time, instead of falling to the ground in larger droplets. This is another reason for wearing a mask... (CNN)

### **FDA Approves First Drug to Treat Group of Rare Blood Disorders in Close to 14 Years**

The US FDA has approved mepolizumab for adults and children, 12 years of age and above, with hypereosinophilic syndrome (HES) for 6 months or longer, without any other identifiable non-blood-related cause of the disease.

The new indication for the drug is the first approval for HES in around 14 years. This is the first time in over a decade that a new FDA-approved treatment option is available for patients with HES, stated Ann Farrell, MD, director of the Division of Nonmalignant Hematology in the FDA's Center for Drug Evaluation and Research.

A randomized, double-blind, multicenter, placebo-controlled trial assessed the drug in 108 patients with HES. Patients received mepolizumab or placebo by injection every 4 weeks and were compared for HES flare during the 32-week treatment period. Fewer patients in the mepolizumab group (28%) had HES flares compared to the placebo group (56%), with a 50% relative reduction... (FDA)

### **Children Half as Likely to Catch COVID-19 as Adults, Reveals Meta-analysis**

Children were less likely than adults to contract a COVID-19 infection from an index case, revealed a meta-analysis.

Across 32 contact tracing or population testing studies comparing SARS-CoV-2 prevalence in children and adults, children below 14 years of age had lesser likelihood of being infected from an index case overall (odds ratio [OR] 0.56, 95% CI 0.37-0.85), and particularly in studies evaluating household transmission (OR 0.41, 95% CI 0.22-0.76). Adolescents aged 14 and above were shown not to have a significantly lower risk of infection compared to adults (OR 1.23, 95% CI 0.64-2.36). Additionally, seroprevalence was lower in children than adults, especially for children younger than 14, who had 48% decreased odds of infection compared to young adults aged 20 and above. The findings were published in *JAMA Pediatrics*... (Medpage Today)

### **COVID-19's Mental Health Consequences in Youth**

New research suggests that a rise in suicidal thoughts and attempts, anxiety and depression are among the

leading mental health consequences of the COVID-19 pandemic in the youth.

A survey of 1,000 high school and college students revealed that nearly 25% reported they knew a peer who developed suicidal thoughts since the beginning of the pandemic. Around 5% reported making a suicide attempt themselves since the COVID outbreak started. Furthermore, more than half reported that they were worried about their own mental health. The findings highlight the toll that the pandemic has had on students' mental health. It was noted that 58% of the college students and 53% of the high school students reported being moderately or very or extremely worried about their mental health... (Medscape)

### **Tobacco Accounts for 20% of Deaths from Coronary Heart Disease**

About 1.9 million people die every year from tobacco-induced heart disease, suggests a new report released by the World Health Organization, World Heart Federation and the University of Newcastle Australia.

This amounts to 1 in 5 of all deaths from heart disease. Authors urge all tobacco users to quit and avoid a heart attack, and emphasize that smokers have greater odds of experiencing an acute cardiovascular event at a younger age compared to non-smokers. Only a few cigarettes a day, occasional smoking, or exposure to second-hand smoke tend to heighten the risk of heart disease. However, taking immediate action can help tobacco users decrease their risk of heart disease by 50% following 1 year of smoking cessation... (WHO)

### **Even Moderate Drinking may Increase Hypertension Risk in Diabetes**

Even moderate alcohol consumption may heighten the risk of hypertension in adults with type 2 diabetes, suggests new research.

Data from more than 10,000 adults participating in the ACCORD trial was assessed and the investigators noted that moderate alcohol consumption increased the likelihood of elevated blood pressure (BP), stage I hypertension and stage II hypertension by 79%, 66% and 62%, respectively. After accounting for covariates, heavy alcohol consumption was found to be associated with nearly double the risk of elevated BP, a 2.5-fold increase of stage I hypertension and a three-fold risk of stage II hypertension. The findings were published online in the *Journal of the American Heart Association*... (Medscape)

### Novel Once Weekly Insulin for Type 2 Diabetes

According to a randomized, placebo-controlled phase II trial, a novel insulin formulation administered once weekly appeared to be as safe and effective as a conventional daily insulin product for type 2 diabetes.

When compared with once daily insulin glargine U100, patients administered once weekly insulin icodec experienced similar mean reductions in glycated hemoglobin (HbA1c) levels after 26 weeks (between-group difference -0.18%, 95% CI -0.38 to 0.02,  $p = 0.08$ ), reported researchers in the study published in the *New England Journal of Medicine* and presented at the virtual European Association for the Study of Diabetes 2020 meeting. Patients on the weekly insulin had an average HbA1c fall of 1.33% compared to 1.15% for those on daily insulin glargine... (*Medpage Today*)

### Glomerular Hyperfiltration Tied to Liver Disease Severity in Children with NAFLD

Yodoshi et al conducted a study to establish the prevalence of renal impairment in a cohort of youths with histologically confirmed nonalcoholic fatty liver disease (NAFLD). The investigators also aimed to ascertain its association with liver disease severity.

In a pediatric cohort with biopsy-confirmed NAFLD, investigators collected clinical, laboratory and histology data retrospectively at a tertiary care center from 2010 to 2017. Histological NAFLD severity was scored and glomerular filtration rate (GFR) was calculated and categorized into low ( $<90$  mL/min/1.73 m<sup>2</sup>), normal (90-136 mL/min/1.73 m<sup>2</sup>) or high ( $>136$  mL/min/1.73 m<sup>2</sup>) categories.

There were 179 patients in the study (median age 14 years). About a third of the patients had abnormal renal function, with 36 (20%) having glomerular hyperfiltration and 26 (15%) having low GFR.

Multivariable logistic regression revealed that in comparison with normal GFR, hyperfiltration had an independent association with greater NAFLD activity score, after adjustment for age, sex, ethnicity, obesity severity, presence of type 2 diabetes mellitus, as well as medications.

Renal impairment was found to be highly prevalent in this cohort with histologically confirmed NAFLD, and was associated with liver disease severity, independent of obesity severity. Investigators thus recommend screening patients with confirmed NAFLD for renal complication.

Source: Yodoshi T, Arce-Clachar AC, Sun Q, et al. *J Pediatr.* 2020;222:127-33.

### Bill to Protect Healthcare Workers Against Violence Passed

New Delhi: The Lok Sabha on 21st September passed a legislation providing for up to 7 years in jail for those attacking healthcare workers fighting the coronavirus pandemic or during any situation similar to the current pandemic.

The Epidemic Diseases (Amendment) Bill, 2020, is set to replace an ordinance issued in April by the government. The Rajya Sabha passed the bill on 19th September. As the Lok Sabha gives its nod, it will soon become an act, which will amend a 123-year-old legislation. The Bill aims to ensure that during any situation similar to the current pandemic, there is no tolerance to violence against healthcare professionals and damage to property.

According to the proposed act, commission or abetment of such violence will be punishable with imprisonment for 3 months to 5 years and a fine of ₹ 50,000 to ₹ 2,00,000. In case of grievous hurt, the imprisonment shall be for 6 months to 7 years with a fine of ₹ 1-5 lakh... (*NDTV - PTI*).

### Sleep Duration Linked with Cognitive Decline

Global cognitive function was shown to drop faster among individuals with either very short or very long sleep duration compared to people who slept 7 hours a night, suggest combined data from England and China.

Over 1,00,000 person-years of follow-up, cognitive 'z' scores had a pooled  $\beta$  of -0.022 (95% CI -0.035 to -0.009 SD per year) with 4 or fewer hours of sleep a night and a pooled  $\beta$  of -0.033 (95% CI -0.054 to -0.011 SD per year) with 10 or more hours, in adjusted analyses, reported researchers. Extreme sleep duration was shown to be linked with lower cognitive function at baseline. The findings are published in *JAMA Network Open*... (*Medpage Today*)

### Study Says Most Homemade Masks Block Large Cough Droplets

Researchers from the University of Illinois at Urbana-Champaign in the US looked into the effectiveness of common household fabrics used to make homemade masks in blocking droplets produced by coughing and sneezing, and noted that they provide appreciable protection even as a single layer.

Investigators assessed the breathability and droplet-blocking potential of 11 common household fabrics, including new and used garments, quilted cloths, bed sheets and dishcloth material, with a medical mask as

a benchmark. All of the fabrics that were tested were found to be considerably effective at blocking the 100 nm particles carried by high-velocity droplets similar to those that may be released on speaking, coughing and sneezing, even as a single layer. The study is published in the journal *Extreme Mechanics Letters...* (*The Indian Express – PTI*)

### Antidepressants for Dementia Prevention

Treatment with the selective serotonin reuptake inhibitor (SSRI) escitalopram tends to decrease amyloid-beta-42 (A $\beta$ 42) levels in the cerebrospinal fluid (CSF) of cognitively normal older adults, suggest researchers, pointing to a potential role for these drugs in the prevention of Alzheimer's disease (AD).

The researchers; however, acknowledge that it still needs to be seen if the relatively modest reduction in CSF A $\beta$ 42 will lead to clinical benefit. Investigators evaluated the effects of escitalopram in 114 cognitively normal adults aged 50 years and older. The patients were given escitalopram 20 mg/day for 2 or 8 weeks or 30 mg/day for 8 weeks while control participants received placebo. Exploring the two dose regimens together, a significant overall 9.4% percentage point greater reduction was seen in CSF A $\beta$ 42 in escitalopram-treated patients compared to placebo group. The study is published online in *Neurology...* (*Medscape*)

### CDK4/6 Inhibition Improves Progression-free Survival in Endometrial Cancer

Women with advanced, hormone receptor (HR)-positive cervical cancer lived over twice as long without disease progression if they were given the cyclin-dependent kinases (CDK) inhibitor palbociclib in association with hormonal therapy, suggested a small randomized trial.

Median progression-free survival (PFS) was found to increase from 3.0 months with letrozole alone to 8.3 months with letrozole and palbociclib. The disease control rate (DCR, response plus stable disease) with the combination was 63.6% compared to 37.8% with letrozole alone. Adding letrozole also added toxicity, as one-fourth of patients in the combination group discontinued treatment due to adverse events (AEs), but the regimen was tolerable in most patients, reported Mansoor R Mirza, MD, of Copenhagen University Hospital, at the 2020 European Society for Medical Oncology (ESMO) virtual congress... (*Medpage Today*)

### Dose-Response Relationship Between Exercise and Improvement in Diabetes

The more patients with type 2 diabetes exercise, the greater the decline in A1c, suggests a new post-hoc analysis of data collected over 6 months of supervised exercise.

This dose-response relationship between exercise and fall in A1c was sustained for those who did aerobic training or combined aerobic and resistance exercises, but not for those who only did resistance exercises, suggest researchers in an article published in *Medicine & Science in Sports & Exercise*. According to the findings, an increased volume of aerobic or combined aerobic and resistance exercise is linked with greater improvement in glycemic control. Additionally, individuals who did the most exercise had the greatest improvements in A1c, with a 20% increase in adherence (correlated with an additional two sessions a month) being linked with a 0.15% decrease in A1c... (*Medscape*)

### Biologics for Psoriasis may Reduce Coronary Plaque

Biologics used for the treatment of psoriasis may also help reduce lipid-rich necrotic core (LRNC), a high-risk plaque associated with cardiovascular events, suggests new research from a prospective, observational study.

Cardiac CT scans were performed on patients with psoriasis 1 year following the initiation of biologic therapy. A reduction in LRNC was noted among these patients in comparison with patients who were not receiving biologics, reported investigators. The association with reduction in LRNC and biologic therapy remained significant after adjusting for the type of biologic. The findings were published in *Circulation: Cardiovascular Imaging*.

Investigators assessed 289 patients with psoriasis within the Psoriasis Atherosclerosis and Cardiometabolic Disease Initiative cohort. The patients had a mean Psoriasis Area and Severity Index (PASI) score of 6.0. There was a significant decrease in LRNC 1 year after patients started biologic therapy (median, 2.97 mm<sup>2</sup>; interquartile range, 1.99-4.66), compared to baseline (median, 3.12 mm<sup>2</sup>; IQR, 1.84-4.35) (p = 0.028). Patients who did not receive biologic therapy had nonsignificantly higher LRNC after 1 year (median, 3.12 mm<sup>2</sup>; IQR, 1.82-4.60), in comparison with baseline (median, 3.34 mm<sup>2</sup>; IQR, 2.04-4.74) (p = 0.06)... (*Medscape*)

