Indian Journal of Clinical Practice, Vol. 32, No. 3, August 2021

News and Views

COVID-19 Hospitalizations 3-fold Higher in US States with Less Than Half of Residents Vaccinated

Average coronavirus disease 2019 (COVID-19) hospitalization rates seem to be around 3-fold higher in states where less than half of the residents are fully vaccinated compared to the average in the states that have vaccinated over half of their residents, revealed a CNN analysis.

Additionally, the COVID-19 case and fatality rates have been over twice as high in states that have vaccinated less than half of their residents. As per data obtained from the US Department of Health and Human Services, average current hospitalizations among states with less than half of residents vaccinated was 14.4 per 1,00,000 residents, while that in states that have vaccinated more than half of their residents stood at 4.9 per 1,00,000 residents. Daily COVID-19 case rate as per Johns Hopkins University data, was 23.7 per 1,00,000 residents in states that have vaccinated less than half of residents compared to 9.3 per 1,00,000 residents among states with more than half of residents vaccinated… (*CNN, July 29, 2021*)

Some Gut Bacteria Linked to Lower Diabetes Risk

More diverse gut bacteria and higher abundance of 12 butyrate-producing bacteria have been found to be tied to less insulin resistance and less type 2 diabetes in a population-based observational study.

The study published in *JAMA Network Open* also identified several bacteria that ferment dietary fiber in the gut to produce butyrate, which may contribute to the protection against type 2 diabetes.

The study confirmed that low diversity in gut microbiome is linked with a heightened risk of obesity and type 2 diabetes. A higher abundance of each of seven types of butyrate-producing bacteria, namely *Christensenellaceae, Christensenellaceae R7* group, *Marvinbryantia, Ruminococcaceae UCG005, Ruminococcaceae UCG008, Ruminococcaceae UCG010* and *Ruminococcaceae NK4A214* group, was shown to be tied to lower insulin resistance, after adjusting for confounders like diet and drugs. Additionally, a higher abundance of each of five types of butyrate-producing bacteria, including *Clostridiaceae 1, Peptostreptococcaceae, C sensustricto 1, Intestinibacter* and *Romboutsia*, was linked with less type 2 diabetes… (*Medscape*)

US FDA Agrees to Extend Shelf-life of J&J COVID-19 Vaccine, Says Company

Johnson & Johnson (J&J) has stated that the US Food and Drug Administration (FDA) extended the shelf-life of its COVID-19 vaccine from 4½ to 6 months. The decision came after the data obtained from ongoing studies indicated that the vaccine is stable at 6 months while refrigerated at 2-8°C or 36-46°F. The agency stated, in a letter to the company, that it had reviewed the data provided by J&J, and on the basis of the information provided, it agrees with the extension of the vaccine's shelf-life. The extension also applies to the vaccine batches that might have expired before the letter was issued, under the condition that they were stored at the suggested temperature, said the agency… (*Reuters*)

Pfizer Third Dose Strongly Boosts Protection Against Delta Variant, Shows Data Released by Company

A third dose of the Pfizer/BioNTech vaccine against COVID-19 has the potential to strongly improve protection against the Delta variant, more than the protection provided by the standard two dose regimen, suggest latest data released by Pfizer.

The data indicate that the levels of antibodies that protect against the Delta variant increase by about 5 times in individuals aged 18 to 55 years who receive a third dose of the vaccine. Additionally, among people aged 65 to 85 years, antibody levels that protect against Delta variant rise by 11-fold more than that after the second vaccine dose.

The data have not yet been peer-reviewed and it is unclear if the improved antibody levels actually correlate to better protection… (*CNN*)

Shorter Antibiotic Regimen Better in Men with UTI

Seven days of antibiotic treatment among afebrile men with suspected urinary tract infections (UTI) was found to be as effective as a 14-day regimen in a randomized, double-blind trial published in *JAMA*.

Among more than 250 men with suspected symptomatic UTI included in the as-treated analysis, 93.1% of the patients in the 7-day group had resolution of symptoms by 14 days after completing the antibiotic treatment, compared to 90.2% of the patients in the

14-day group. There was a difference of 2.9%, meeting the noninferiority criterion of 10%. A secondary as-randomized analysis conducted among more than 270 men revealed that symptom resolution was noted in 91.9% of the patients in the 7-day regimen group vs. 90.4% in the 14-day regimen group, with a difference of 1.5%... (*Medpage Today*)

Pfizer, AstraZeneca Vaccine Antibody Levels Start Decreasing After 6 Weeks

The antibody levels start decreasing 6 weeks after complete inoculation with Pfizer and AstraZeneca COVID-19 vaccines, and can decrease by over 50% over 10 weeks, suggests a study published in *The Lancet*.

Investigators from University College London (UCL), UK noted that if the antibody levels continue to decline at this rate, the protective effects of the vaccines may also start to dwindle, especially against the new variants. The UCL Virus Watch study noted that antibody levels were considerably higher after two doses of the Pfizer vaccine compared to the AstraZeneca vaccine. Additionally, the levels of antibodies were higher in vaccinated individuals compared to those who had a previous severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection… (*ET Healthworld – PTI*)

US Urged Fully Vaccinated to Wear Masks Indoors in Some Places

People of America who have been fully vaccinated against COVID-19 must start wearing masks again in indoor public places in areas where the infection is showing a rapid spread, stated US health authorities.

The US Centers for Disease Control and Prevention (CDC) also recommended that all students, teachers and staff at schools for kindergarten up to 12th grade should wear masks, irrespective of their vaccination status. COVID-19 cases have been on the rise in the country owing to the highly transmissible Delta variant, which is accountable for over 80% of the cases in the US. President Joe Biden stated that ramping up vaccination and wearing masks would help the country evade lockdowns and closure of schools… (*Reuters*)

Diabetes Duration Tied to Increasing Heart Failure Risk

Longer the duration of diabetes, greater the risk for developing heart failure, stated an analysis of around 10,000 US adults followed for about 23 years. A multivariable analysis revealed that there was a steady and significant escalation in the rate of incident heart failure with increase in diabetes duration. Among 168 study subjects, constituting 2% of the total study group, who had diabetes for at least 15 years, the incidence of heart failure was shown to be around three times higher than among 4,802 individuals (49%) who never had diabetes or prediabetes, reported researchers in *JACC Heart Failure*.

Individuals with prediabetes, who constituted 32% of the study population, demonstrated a significant yet modest increase in the rate of incident heart failure - 16% higher than control group that never developed diabetes. People with diabetes for duration of 0-4.9 years, 5.0-9.9 years or 10-14.9 years, demonstrated a steady rise in relative incident heart failure rates of 29%, 97% and 210%, respectively, compared to controls… (*Medscape*)

Patients with Hypertension Most Likely to Develop Post-COVID Complications

A recent analysis of medical records of more than 1,800 patients admitted to hospitals run by the Mayo Clinic in the United States has shown that patients with hypertension have the greatest odds of developing complications after COVID-19 infection.

Another study involving 18,000 COVID-19 patients conducted by Max Healthcare has also found a role of hypertension in complications. The study conducted in the US revealed that hypertension was tied to 10 complications, including acute respiratory distress syndrome, improper beating of the heart and anemia. In the analysis conducted with the help of an artificial intelligence (AI) platform developed by nference Labs, the other most significant factors that predicted complication in early COVID-19 infection included cardiovascular chronic disease, such as heart failure, coronary artery disease, cardiomyopathy and chronic kidney disease… (*ET Healthworld – TNN*)

COVID-19 has Considerable Impact on Intelligence in Recovered Patients, Says Study

A severe COVID-19 infection that involves hospital admission and ventilator support can have a considerable impact on a recovered patient's intelligence as part of long-COVID symptoms, reported a UK study. Investigators assessed 81,337 participants from January through December 2020 as part of the Great British Intelligence Test. The questionnaire items included self-report of suspected and confirmed COVID-19 infection and respiratory symptoms. The results agree with the reports of long-COVID, where brain fog, difficulty in concentrating and difficulty finding the correct words

are common, stated the study. Recovered individuals had significant cognitive deficits compared to controls after controlling for age, gender, education level, racial-ethnic group, pre-existing medical disorders, tiredness, depression and anxiety, and income.

The findings are published in *The Lancet - EclinicalMedicine*… (*NDTV – PTI*)

Safe to Take Second mRNA Vaccine Dose After Allergic Reaction to First

Individuals who had an allergic reaction to a first dose of the Pfizer/BioNTech or Moderna mRNA COVID-19 vaccine tolerated a second dose safely, reported a retrospective, multicenter study.

Overall, 17% of the 189 individuals with initial allergic reactions had anaphylaxis. Other reactions to the first dose included erythema, dizziness, tingling, throat tightness, hives and wheezing or shortness of breath. Among the 189 people with initial allergic reactions, researchers assessed 159 (84%) who took the second dose. All the individuals, including 19 people with first-dose anaphylaxis, tolerated the second dose. Thirty-two people who took a second dose developed immediate and potentially allergic symptoms. About 20% of the individuals had symptoms with the second dose, but they were manageable and not anaphylactic, noted researchers. The findings are published in *JAMA Internal Medicine*… (*Medscape*)

A New Treatment Option for Children with Type 2 Diabetes

Exenatide extended-release has now been accorded US FDA approval for use in children aged ≥10 years with type 2 diabetes in addition to diet and exercise to improve glycemic control. This makes it the second glucagon-like peptide-1 receptor agonist approved for use in pediatric type 2 diabetes, after liraglutide, which was approved in 2019.

This injectable formulation is not recommended as a first treatment option for patients whose disease is not adequately controlled through diet and exercise. It is not to be used for children with type 1 diabetes.

Exenatide extended-release has earlier been approved to treat adults with type 2 diabetes.

A boxed warning has been added to prescribing information about the increased risk of thyroid C-cell tumors. The FDA has cautioned that patients with family history of medullary thyroid carcinoma, patients with multiple endocrine neoplasia syndrome type 2 or a history of drug-induced immune mediated thrombocytopenia or those with previous hypersensitivity to exenatide or any of its components should avoid the therapy.

While the overall side effects reported (injection site reactions, headaches and gastrointestinal discomfort) were similar to those seen in adults, warnings about hypoglycemia when used with insulin or insulin secretagogues, acute kidney injury, gastrointestinal disease, immunogenicity, allergic reactions (such as anaphylaxis and angioedema) and drug-induced immune-mediated thrombocytopenia have been included. Type 2 diabetes mellitus was earlier perceived as adult-onset diabetes. But, its prevalence in children and adolescents has increased in recent years. Therefore, it is important to screen children at high risk such as positive family history of type 2 diabetes mellitus and/or clinical features of insulin resistance (such as hypertension, dyslipidemia, polycystic ovarian syndrome or acanthosis nigricans). Type 2 diabetes mellitus is emerging as a new clinical problem within pediatric practice. Recent reports indicate an increasing prevalence of type 2 diabetes mellitus in children and adolescents around the world in all ethnicities, even if the prevalence of obesity is not rising. Therefore, a screening seems meaningful especially in high risk groups such as children and adolescents with obesity, relatives with type 2 diabetes mellitus, and clinical features of insulin resistance (hypertension, dyslipidemia, polycystic ovarian syndrome or acanthosis nigricans).

The American Diabetes Association (ADA) Standards of Medical Care in Diabetes—2021 recommends risk-based screening for prediabetes and/type 2 diabetes after the onset of puberty or after 10 years of age, whichever occurs earlier, in children and adolescents with overweight (body mass index [BMI] ≥85th percentile) or obesity (BMI ≥95th percentile) and who have one or more risk factor for diabetes.

Metformin is the only oral antidiabetic drug approved for use in children with type 2 diabetes, while the approved injectables include insulin, liraglutide and now exenatide.

(*Source: FDA OKs extended-release exenatide for children with type 2 diabetes - Medscape - Jul 23, 2021; https://content.govdelivery.com/accounts/USFDA/bulletins/2e98d66; ADA Standards of Medical Care 2021*)

France Approves Bill to Handle Fourth Wave of COVID-19

French lawmakers have approved a bill recently which will mandate COVID-19 vaccinations for healthcare

workers and require a health pass in several social venues as the country fights the fourth wave of COVID infections.

People visiting museums, cinemas or swimming pools are already denied access if they fail to show a pass that confirms that they have been vaccinated against COVID-19 or have had a recent negative test. The pass has been needed for large-scale festivals or for clubbing. From August, the pass will be required to access restaurants and bars and for long-distance travel by train and plane as well. These measures will end on November 15. A final approval from the constitutional court is needed for the law to come into effect… (*Reuters*)

Low-income Countries Acquired Only 0.27% of COVID Vaccine Doses Administered Thus Far

Low-income countries have received a mere 0.27% of the COVID-19 vaccine doses administered globally thus far, while high-income countries and upper-middle-income countries have received over 80% of the doses.

Among the 27 low-income countries, 23 are in Africa. Owing to the wide inequality in vaccine distribution, out of the 52 African countries, 38 have been able to administer at least one dose of a COVID vaccine to less than 5% of the population. Several countries in Africa have also recorded a recent rise in COVID-19 infections, mostly accountable to the highly contagious Delta variant. Around 27% of the global population has been administered at least one vaccine dose, while in Africa, only 3.13% of the population has received at least one dose… (*The Hindu*)

Flu Activity During the Pandemic: CDC Report

The circulation of influenza and several other respiratory viruses diminished during the pandemic in 2020; however, it was found to increase during the spring of 2021, noted researchers. Flu activity was shown to reduce in March 2020, and continued to remain low until May 2021, as <0.4% of respiratory samples tested positive for influenza per week of the flu season. The patterns were similar for several other respiratory pathogens, including respiratory syncytial virus, parainfluenza viruses, and common human coronaviruses, reported researchers in *Morbidity and Mortality Weekly Report*. Human metapneumovirus and respiratory adenovirus were found to be circulating at low levels from 2020 to 2021. Rhinovirus and enterovirus were low till May 2020 before they rose to near pre-pandemic levels. Experts had warned of a COVID and flu 'twindemic' in the fall of 2020. However, from October 2020 to May 2021, circulating influenza had the lowest activity since 1997… (*Medpage Today*)

EMA Approves Moderna Vaccine for 12 to 17 Years Age Group

The European medicines regulator has granted approval for the use of Moderna COVID-19 vaccine in children aged 12 to 17 years. This is the second vaccine that has been approved for use in adolescents in Europe.

The European Medicines Agency (EMA) announced that the use of the Moderna vaccine, named Spikevax, in children aged between 12 and 17 years, will be the same as in individuals 18 years of age and above. Two shots will be given at an interval of 4 weeks. The Pfizer/BioNTech vaccine was approved for youngsters in Europe in May.

The agency stated that the Moderna vaccine was evaluated in 3,732 children aged 12 to 17 years. The vaccine led to a comparable antibody response in 12- to 17-year-old age group as that noted in young adults, 18 to 25 years of age… (*NDTV – AFP*)

Countries Promote Mix-and-Match COVID Vaccines

Despite preliminary data, certain countries are going ahead with mixing and matching mRNA and adenoviral vector COVID-19 vaccines, usually guided by supply constraints.

Germany has made an official recommendation to mix-and-match vaccines, encouraging people to get a dose of an mRNA vaccine after their AstraZeneca jab. Chancellor Angela Merkel had followed her initial AstraZeneca shot with a Moderna jab in June. Canada and Thailand have also started administering COVID-19 shots on a heterologous schedule. While the EMA and the European Centre for Disease Prevention and Control (ECDC) did not issue any specific recommendation, but they promoted mix-and-match approach in a press release which stated that good scientific grounds exist to expect that this approach would be safe and effective when used in vaccination against COVID-19… (*Medpage Today, July 22, 2021*)

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