

Special Correspondence

Strike Omicron before you Captures It !

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Omicron is currently shaking the world to its core. The disease is mainly transmitted via the respiratory route when people inhale droplets and small airborne particles (that form an aerosol) that infected people exhale as they breathe, talk, cough, sneeze, or sing. "UK becomes first country in Europe to pass 1,50,000 COVID deaths Omicron clouds forecasts for Covid end game. Omicron is a variant of nSARS-CoV-2 that has been identified initially in COVID-19 patients in Botswana and South Africa. The chief of the World Health Organization (WHO), Tedros Adhanom Ghebreyesus, has said that the combination of Delta and Omicron variants of coronavirus is driving a tsunami of COVID-19 cases. The statement came as record new cases were reported from the United States and countries across Europe. France recorded the highest ever daily numbers in Europe for the second consecutive day, at 208,000 new cases. Vaccines offer strong protection from serious illness.

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The pandemic impacted global health for many other conditions. Hospital visits fell. SARS-CoV-2 is a newly discovered virus that is closely related to bat coronaviruses. Several variants have been named by WHO and labelled as a Variant of Concern (VoC) or a Variant of Interest (VoI). They share the more infectious D614G mutation

New threat in coming days

Genome progression of Omicron variant

The Omicron variant was sequenced from a viral isolate collected from Gauteng, South Africa in early November 2021 (The variants were named by WHO according to the letter order of the Greek alphabet.

U S-Epsilon (B.1.249, B.1.427 (March 2021) Iota (B.1.526) (March 2021)

Peru (C.37)-(Lambda)

Columbia-August-2021 (B.1.621 (Mu)

Brazil—(March 2021) (P.2) (Zeta) (January 2021) (P.1) (Gamma)

U K (Alpha) (B.1.1.7) (December 2021)

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Editor's Comment :

■ Omicron illness has affected several million patients in all age groups throughout the world. Omicron is a blessing in disguise variant that causes mild infections like common cold with rapid spread and is an indication for the end of Pandemic. The WHO experts are satisfied the new omicron variant is superior to mild. Vaccines are a powerful weapon to fight against Covid.

UK and other countries - (Eta) (B.1.525) (March 2021)

South Africa (December-2020) (B.1351) (Beta) November (B.1.1.529) Omicron (Botswana and other countries)

April 2021) (B.1.6171) (Kappa) (March 2021) (B.1.617.2) (Delta) (India)

Philippines (Theta) (P3) (March 2021)

Deltacron—Cyprus—January—2022

G. A new Covid-19 variant—Marseilli-France

Something to be worried about at the moment, a media report said. Kostrikis also emphasized that the variant has a similar genetic background to the Delta variant, as well as some of the mutations from Omicron. As on 10/January/2022, 25 cases of Deltacrons were detected.

Variant of Concern :

According to a PIB press release published on 9/1/2022, 1.79 lakh new cases were recorded in just 24 hours.

It should have the following conditions

- (1) Transmission is very high
- (2) Severity of illness is very high
- (3) Efficacy of drug is low

(4) Decrease efficacy of vaccine

Scientists race to work out how dangerous is the variant :

Omicron is now found in two dozen countries.

In US 10 lack cases recorded on 4/1/2022

As the COVID surge continues in India, AIIMS chief DrRandeepGuleria has told The Indian Express that the Omicron variant mainly affects the upper respiratory tract and airways, and people without comorbidities should not panic and should not block the hospital beds.He emphasized that the focus should be on home isolation as the recovery time for the new variant is much faster. Omicron now is fueling a rise in cases again, and the country in January will roll out vaccine boosters for frontline workers.

Clinical Symptoms :

Omicron is a blessing in disguise variant that causes mild infections like common cold with rapid spread and is an indication for the end of Pandemic. The WHO experts are satisfied the new omicron variant is superior to mild. Patients experience a severe headache, nausea, dizziness and high pulse rate, according to hospitals and medics across South Africa.

Immunity :

Memory B cells are one of those layers, cells that live for years in the bone marrow, ready to swing into action and produce more antibodies when needed. But first those memory cells get trained in immune system boot camps called germinal centers, learning to do more than just make copies of their original antibodies.

In a new study, Ellebedy's team found Pfizer vaccinations rev up "T helper cells" that act as the drill sergeant in those training camps, driving production of more diverse and stronger antibodies that may work even if the virus changes again (**Hindustan times, January, 2022**).

The immunity after COVID-19 infection or after vaccination lasts for about nine months, said the director general of Indian Council of Medical Research (ICMR), DrBalram Bhargava, as he cited evidence from several global and Indian studies.Dr Bhargava said that evidence also indicates that a strong response was mounted through hybrid immunity which developed among people who were vaccinated after recovering from natural COVID-19 infection.

The immunity confirmed by COVID-19 vaccine particularly to prevent infections falls over time.Common cold protects against covid.People with higher levels of T cells common cold corona viruses are less likely infected.

Mutations : Omicron from mice

Mutations are not found in Alfa, beta gamma, and delta.B1.1 variant show highest sequence similarities to omicron.Normal rate of mutations in spike protein RNA is 0.45 mutations /month.During missing time for omicron 27mutations accumulated in spike protein RNA during 18months.3.3 faster than average rate of other mutations.Omicron has cripticallyspread.and circulated in population.Second hypothesis is omicron could have evolved in a chronically infected Covid-19 patients.The third hypothesis is omicron could have accumulated mutations from non-human host and jumped into human.

New Coronavirus Variant Identified In France, May Have 46 Mutations :

Amid the surge of Omicron variant of SARS-CoV-2 across the globe, scientists have now identified a new strain of the virus in Southern France.Named as IHU, the B.1.640.2 variant has been identified by researchers at institute IHU Mediterranee Infection in close to 12 cases. The variant has been linked to travel to the African country Cameroon.

Thousands of schools in the United States postponed the scheduled school openings this week after the holiday break or switched to online learning as the Omicron variant continued to surge.In other school districts, officials pressed on with reopening plans, including in New York City, where one in every three COVID-19 tests over the last week returned positive.According to the Mayo Clinic, on average 18% of tests are returning positive across the country.New York City Mayor Eric Adams intended.

As India witnesses a third COVID wave, a large proportion of Omicron cases have been reported from big cities, stated the head of India's vaccine task force, Dr NK Arora.Dr Arora said that big cities like Mumbai, Delhi and Kolkata together have a 75% share of infections due to the Omicron variant.

"Could Natural COVID Immunity be better than Vaccinated Immunity?"

The Omicron variant is nearly 3 to 4 times more infectious than the Delta variant among vaccinated persons if a household member becomes infected, suggests a preprint study from Denmark. The booster vaccinated persons are less likely to spread the infection.The transmission of the Omicron variant in households was investigated, which covered 11,937 households

"Beat Omicron Before You Catch It !"

Omicron is now circulating widely in many countries quickly taking over from Delta.It has

doubling time of only three days which means cases double every three days. It will soon become a dominant variant around the world. This virus can jump from human to animals and back. Omicron shows common symptoms like runny nose, headache, fatigue, sore throat and sneezing.

Monoclonal antibodies :

Monoclonal antibodies are usually produced in an animal in response to a simple antigen are heterogeneous as they are synthesized by several different clones of cells i.e., they are polyclonal. Antibody produced by single antibody forming cell or clone directed against single antigen or antigenic determinant is called monoclonal antibody.

Spike proteins of the virus have access with ACE-2 receptors. The purpose of MAB is to lock off spike proteins, and prevent the entry of virus into the cell. These are the neutralizing antibodies. Infusion of MAB medicines prevent hospitalization.

Tocilizumab (TCZ) is a humanized IgG1 recombinant monoclonal antibody used for the treatment of cytokine release syndrome (CRS) associated with rheumatologically conditions and was postulated to have some role in patients with a severe or life-threatening COVID-19 disease.

Itolizumab is a recombinant monoclonal antibody against CD6 (Cluster of Differentiation 6) of IgG1 (Immunoglobulin G1). Based on the mode of action, it has been used as treatment option for COVID-19 infection. However, more clinical data is awaited to establish its role in severe COVID-19.

Immunosuppressants which are under trial include Anakinra (AKR) which acts on endogenous elevated IL-1 levels in patients with COVID-19. Baricitinib is a selective inhibitor of Janus Kinase (JAK)1 and 2.

Ancient science needs to be put into modern tests

Direct—

- (1) Antigen detection
- (2) RTPCR (Reverse Transcriptase Polymerase Chain Reaction)
- (3) Truenat
- (4) Gene Xpert - Cartridge based nucleic acid testing (CBNAT)

Indirect :

Antibody detection— Not recommended for diagnosis. Useful for seroprevalence estimation

Saliva swabs detected Omicron variant more accurately compared to the nasal swabs, according to a study from South Africa, published as a preprint on medRxiv. In this study, researchers from the University of Cape Town enrolled 382 acutely symptomatic, non-hospitalized patients who came for

Covid-19 test. The data was collected between August and December 2021. Nasal (mid-turbinate) and saliva swabs were collected for RT-PCR test.

RT-PCR based Assay for screening of Omicron variant (B.1.1.529.1) of SARS-COV-2 developed at IIT Delhi. Currently, the identification or screening for Omicron is done world-wide using next generation sequencing based methods, which require over three days. By using this RT-PCR based assay, it will be possible to test for the presence of Omicron variant within 90 minutes.

Bharat Biotechnology Research Centre (GBRC) has developed a PCR based method to detect the Omicron variant of SARS-CoV-2 within 8 hours. Whole genome sequencing can otherwise take up to 72 hours. Constant RT-PCR.

Research did at Imperial College London, UK propose that long COVID-19 could be analyzed by a straightforward blood test.

Nearly 80% COVID positive samples sent to genome sequencing laboratories in Calcutta have been found to contain the BA-2 sub lineage of Omicron variant nick named the "Stealth version" as it cannot be detected by RT-PCR tests. Interestingly almost all these found infected with BA.2, had no immediate history of foreign travel. The sub lineage B.1 has been detected in those travelled abroad in the recent past said a senior health official. From the original B.1.1.529, first detected in South Africa. Omicron now split into three types. BA.1, BA.2 and BA.3. BA.3 is not identified in India. In Maharashtra BA.1 is dominantly circulating. BA.2 cannot be identified in the primers of RT-PCR test.

Break through treatments

It was the initiator in human history where a clinical identification was executed very early in the case of a pandemic. Several antiviral drugs, anti-inflammatory agents, immune modulators, and vitamins were used to control COVID-19 disease.

The anti-inflammatory drugs and immune regulator agents are advantageous in lessening the effect of the cytokine storm. Corona drugs are doubtful for the Omicron variant.

Covid Vaccines

- 'GERMAN-US' vaccine: Pfizer-BioNTech; BNT162b2; New messenger RNA (mRNA) platform
- 'US' vaccine: Moderna; mRNA-1273 for spike protein; New messenger RNA (mRNA) platform.
- 'British' vaccine: Oxford-AstraZeneca; ChAdOx1 nCoV19 / Covishield; Traditional inactivated virus platform
- 'Russian' vaccine: Gamaleya Institute; Sputnik V
- 'Indian' vaccine: Bharat Biotech, Hyderabad / ICMR's National Institute of Virology, Pune; Covaxin;

Booster dose trial

Sub group immunogenicity, analysis by age for anti-spike IgG and cellular response at 28 days post third dose between study vaccines and controls for the Ch/Ad,Ch/Ad-primed population.

Omicron can evade protection offered by vaccines, antibody treatment: Study

Omicron can evade the protection offered by COVID-19 vaccines and natural infection, according to a peer-reviewed study, published in the journal Nature. The variant is also resistant to the antibody treatments currently being used, noted the study. The study assessed the potential of antibodies evoked by vaccination to neutralize the Omicron variant in lab tests.

Multivitamins, paracetamol only treatment given to Omicron patients at hospital in Delhi

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Omicron patients at Delhi's LokNayak hospital have been given only multivitamins and paracetamol as treatment thus far, said doctors. The hospital has reported 40 Omicron cases till now,

The ongoing COVID-19 pandemic was first reported in December 2019. Since then it has spread globally and affected millions of people. Transmission of the severe acute respiratory syndrome-coronavirus 2 (SARS-CoV-2) is via respiratory droplets and contaminated surfaces and objects (fomite transmission). The reservoirs of the virus are the nasal cavities, nasopharynx, oral cavity and oropharynx

A preprint study from Scotland has shown that infection with Omicron is associated with fewer hospitalizations with Omicron when compared to delta infections. It has further shown that the booster dose provides considerable protection within two weeks of administration compared to two doses received 25 or more weeks ago. In this preliminary study, researchers from the University of Edinburgh, University of Strathclyde and Public Health Scotland analyzed data from 23,840 patients with Omicron

Will the Vaccines Stop Omicron? Scientists are running against to Find Out.

Dr. Penny Moore, virologist at the National Institute for Communicable Diseases in South Africa, is working with her team to test how vaccines respond to Omicron. She and her colleagues are preparing to test blood from fully immunized people against a synthetic version of the Omicron variant (*The New York Times*).

COVID vaccines can be mixed for booster shots, says WHO's provisional report

Based on availability, mRNA vaccines (Pfizer, Moderna) can be used as subsequent doses after an

individual has been administered AstraZeneca's vectored vaccine as their first dose and vice versa, the WHO report said. AstraZeneca and the mRNA vaccines can also be used after initial doses of Sinopharm's inactivated vaccine, the global health body said.

Why is pandemic Policymaking still short of science?

We have to focus on improving scientific temper among both the population and policymakers. This is necessary to improve compliance with science based decisions, and more importantly for the public to question policymakers' unscientific decisions. There are supporters of science among policymakers and we need platforms for them to unite. We need to mandate transparent policy development mechanisms which also allow public scrutiny before and after decision. An independent body to scrutinize every policy decision and its evidence base and put this in the public domain needed. Will government bite this bullet? If not who do we go to? Courts or philanthropists? Dr Ananda Krishnan, has expressed his personal views at the center of community medicine, AIIMS, New Delhi.

Australia hits COVID-19 case record

Australia registered a record high of daily COVID-19 cases for the third day in a row on Wednesday, further increasing the pressure on hospital resources and testing facilities, as anger grew among people over the handling of the Omicron outbreak. A record number of 64,758 new infections was reported on Wednesday, with the majority being in New South Wales (NSW) and Victoria

CDC updates COVID-19 isolation recommendations it is best to use a rapid test toward the end of their 5-day isolation period. The agency faced criticism and pressure to include a testing component in the new decreased isolation period.

India sees higher spread of COVID-19 than second wave peak: Govt official

India is witnessing an exponential increase in the number of COVID-19 cases, believed to be largely driven by the Omicron variant, said the Center. It stated that the R naught value in the country, which is an indicator of the spread of the infection, stands at 2.69. This is higher than the value of 1.69 recorded during the peak of the second COVID wave in the country. At a press conference, Director General of the Indian Council of Medical Research (ICMR), Dr Balram Bhargava, said that.

Italy to Make COVID-19 Vaccine Mandatory for Everyone above 50 Years

Italy is set to mandate vaccination against COVID-19 for all people 50 years of age and over, in a bid to

reduce the pressure on its healthcare services and decrease deaths, revealed a draft decree on Wednesday. The draft seen by Reuters states that the move will be effective immediately and will continue till June 15. If confirmed, it would make Italy one of the few countries in Europe to take similar steps.

Risk factors for severe Covid-19 among vaccinated persons

Findings of the CDC's latest Morbidity and Mortality Weekly Report published Jan. 6, show that severe COVID-19 outcomes or death were rare in vaccinated persons. And, all vaccinated persons who developed severe outcomes had at least one risk factor and most of the vaccinated patients who died had a minimum of four risk factors.

Risks posed by new variant still unclear
Omicron rapidly dominating in SA
Data on omicron contagiousness "with in days"

"Latest data, looking good"

"Omicron symptoms "totally different" from Delta COVID-19 variant. The high proportion covid incidental admissions may reflect higher rates of community transmission compared to previous waves. The threat of the Omicron variant poses Canada.

WHO raises alarm over Omicron spread

The chief of the World Health Organization (WHO), Tedros Adhanom Ghebreyesus, has said that the She added that as the case numbers rise, it will strain the healthcare systems

Amid growing concerns over the rapid spread of Omicron variant of the coronavirus, Israel has announced that the country will **offer a fourth dose of the COVID-19 vaccine to people aged above 60 years**. An expert panel of the Health Ministry recommended offering a fourth vaccine dose and the move was welcomed by Prime Minister Naftali Bennett who called it a news that will help the country overcome the Omicron wave

Omicron causes crippling staff shortage.

Hospitals in UK and US are running short of staff. "You are entering the Omicron wave. Hospitals in UK and US are running short of staff. | Omicron Variant. India will witness a peak in the number of Covid-19 cases by next month with the expectation of reporting five lakh cases per day, a US-based health expert said

The bottom line

COVID and its variant pandemics has given humanity a very hard blow. Almost all countries in the world have been devastated. Economy has received a severe setback. Many have lost their near and dear ones. Omicron illness has affected several million

patients in all age groups throughout the world. Vaccines are the powerful weapon to fight against COVID.

Suggested Reading :

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