Pandemic Current Situation SARS-CoV-2 in Tropical and Non-Tropical Region

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Abstract - **Present days the SARS-CoV-2 variant spread to through the world. People suffering from SARS-CoV-2 Variant. COVID cases are rapidly increasing in the world, Covid-19 epidemic is major global disaster and challenge to universe. The new novel Coronavirus that reasons COVID-19 is one of the numerous known to infect humans. So, this virus isn't new to the world, but it is new to human, it was making people sick in 2019, they named it is novel coronavirus. experts named these strains SARS-CoV-2. Omicron is not fathered and mothered, by Wuhan-D614G, Alpha, Beta, Gamma, Delta, Kappa or Mu that much is for sure it's my opinion, this is a variant of unknown proximal percentage, but great grandparent was Wuhan-D614G…D614G refers to amino acid mutation in this protein that has become progressively common in SARS-CoV-2 viruses from around the world. Based on the infected of covid cases, the universal is classified two regions (pandemic). these are tropical and non-tropical regions. non-tropical region. SARS-Cov-2 Covid cases and mortality rate are rapidly increasing in these non-tropical countries. At the same time equatorial (tropical) countries like India, Pakistan, China, Sri Lanka, and African countries are SARS-CoV-2, rapidly Increasing but mortality rate very slow. What is the difference between tropical non-tropical region?**

Index Terms - **COVID-19, SARS-CoV-2, Wuhan-D6146, tropical, non-tropical.**

HISTORY

The first known confirmed B.1.1.529 infection was from a specimen collected on 9 November 2021. The new variant (B.1,1,529) was first discovery in specimens collected on November 11,2021 in Botswana. The B.1.1.529 variant was first reported to WHO from South Africa on 24 November 2021. The TAG-VE was convened on 26 November 2021 to assess the SARS-CoV-2 variant: B.1.1.529. Technical Advisory Group (TAG)-VE has advised WHO that this variant should be designated as a Variant of Concern (VOC), and the WHO has designated B.1.1.529 as a VOC, named Omicron. The epidemiological situation in South Africa has been considered by 3 distinct peaks in informed cases, the up to date of which was principally the Delta variant. Based on the evidence presented indicative of a detrimental change in COVID-19 epidemiology. The WHO grouped Omicron as a 'variant of concern' this category means the variant might have a higher transmissibility, cause more intense disease.

INTRODUCTION

WHO Chief Scientist Dr Swaminathan said, "Though Omicron may cause less severe disease, a small % of a huge number is still very large and can overwhelm health systems." the chief scientist said vaccination protects against hospitalisation and death be it caused by Omicron, Delta or any other variant of covid. WHO Chief says Tsunami of covid cases may lead to collapse of health system. Astrain of covid -19 that combines delta and Omicron has been found in Cyprus, according to Lendio's Kostrikis, Professor of biological sciences the University of Cyprus and head of the laboratory of biotechnology and molecular virology. This discovery was named delta Cron due to the identification of omicron like genetic signatures with him the delta genomes, he said, Kostrikis and his team have identified 25 such cases and the statistical analysis shows that the relative frequency of the combined in fiction is higher among patients hospitalised due to covid -19 as compared to non-hospitalised patient the sequences of the 25 delta Cron were sent to GISAID the international database that tracks change in the viruses on Jan 7th. "we will see in the future if or more contagious or if it will prevail" over delta on Omicron. India's Omicron cases tally

surged to 1,431 as per the data released by the Union Ministry of Family and Health Affairs on Saturday.

The fast-spreading virus variant has spread to 23 states across the country, the government said. CCMB Director Vinay nandikuri Said to omicron very week to resemble to delta, delta variant very spread to in our body and it attack cells by spikes proteins. omicron consists high replication capacity and omicron has low replication capacity. T. Jacob john former director of the ICMR Centre of advanced research in virology. He pointed out that omicron is not feather and mothered by Wuhan D614G, ALPHA, BETA, GAMMA, DELTA, kappa or Mu and that much of is for sure. John said (virologist of ICMR) Omicron a deviate from covid pandemic progression script. As of 6 January 2022 (4 pm CET), the Omicron variant had confirmed in 149 countries. The variant is quickly outstripping Delta in most countries and is now heavy an upsurge in cases in most areas. Covid-19 India's R value which indicate how rapidly COVID-19 is spreading was recoded at 2.2 between January 7 to 13 ,a drop from previous two weeks. The R value marks number of people an infected person can spread the disease to pandemic is considered to end of this value goes below 1. r of the virus The Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE) is an independent group of experts that periodically monitors and evaluates the evolution of SARS-CoV-2 and assesses if specific mutations and combinations of mutations alter the behaviour. (https://www.who.int/news/item/26-11-2021-classification-ofomicron-(b.1.1.529)-sars-cov-2.riant-of-concern.) What UK, South Africa data says about Omicron waves, wave may have peaked in South Africa Cases were increasing in the south Africa from the first week of November, but they spiralled in the last week of the month. The wave packed quickly around December third week with the seven -day average of cases at 23,437. UK in Omicron grip DNA Sequencing suggest there are lakhs of Omicron cases in UK now. The country has about 1.6 lakhs confirmed cases while another 3.5 lakhs suspected cases await future investigation. England confirmed cases 143,071 and suspected cases 317, 256, North Ireland confirmed cases-9,332 and suspected cases Nil, Scotland confirmed cases 6,154 and suspected cases 32,669. Wales confirmed cases 1,385 and suspected cases 2, 553. US average cases July 2020 average cases only 50 cases, 2021 Dec last week 250k, France July 2020 zero cases and Dec 2021 average 80k cases. Italy July 2020 average cases zero and 2021 Dec last week average cases 35k. (WHO, NICD-South Africa, UK Health security Agency, CDC-US).

COVID-19 is the disease caused by a new coronavirus called SARS-CoV-2. WHO first learned of this new virus on 31 December 2019, following a report of a cluster of cases of 'viral pneumonia' in Wuhan, People's Republic of China? The B.1.1.7 lineage has 8 mutations in Spike receptor-binding domain which facilitates the add-on of the virus to the angiotensin-converting enzyme 2 receptor on the surface of human cells, whereas the B.1.351lineage has the N501Y but not the 69/70 deletion. Five cases with recent travel history from UK to India on 22 December 2020 were tested positive by real-time Reverse Transcriptase - Polymerase Chain Reaction, (Rambaut A, *et al*.,2021). Ella *et al*.,2021. reported the development of an inactivated whole-virion SARS-CoV-2 vaccine BBV152, which elicited a remarkable neutralizing antibody response in Phase I clinical. trial against hCoV-19/India/2020770 (homologous), and two heterologous strains from the unclassified cluster, namely, hCoV-19/India/2020Q111 and hCoV-19/India/2020Q100.6. The neutralizing capacity of the sera from humans and non-human primates immunized with mRNA-1273 vaccine and demonstrated effective neutralizing response against B.1.1.7 variant, (Wu *et al*.,2021).

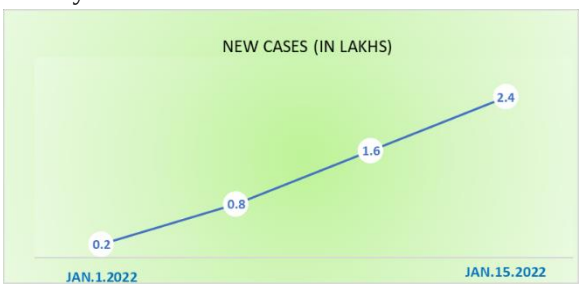
A risk-based approach to regulate international travel measures in an appropriate method is recommended. See WHO advice for international traffic in relation to the SARS-CoV-2 Omicron variant. Aggregated all antibody neutralization studies against Omicron datasets until 22 December 2021, (Netzl, *et al*,.2021). For the most up-to-date guidelines, see the WHO website on COVID-19 Therapeutics.

Table.1. COUNTRY WISE OMICRON PEAK STATUS ON THE DATE OF JANUARY 20TH

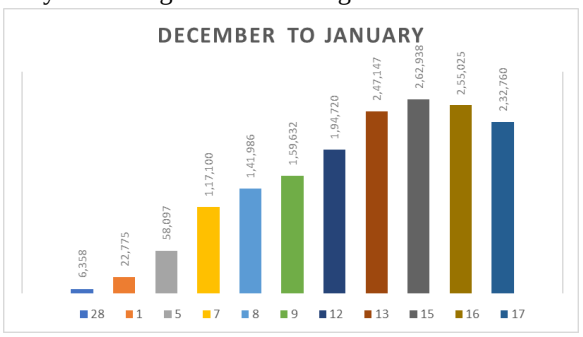
Name of the Country	Number of Waves	Omicron Waves Peak Case
South Africa	4	37,875
USA	6	13,64,418
Brazil	3	1,11,376
UK	5	2,18,376
France	5	3,68,149
Germany	5	93,154

Graph.1. The chart shows the seven days averages of new covid cases recorded in India. the seven days

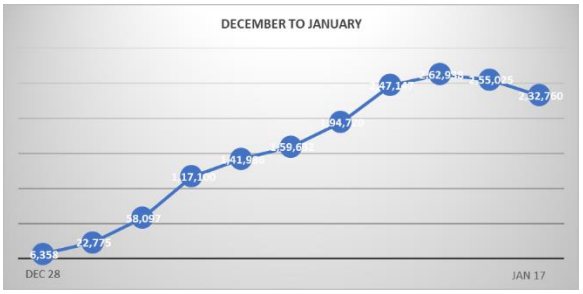
average for cases peaked at 2. 26 lakh cases on January15th.



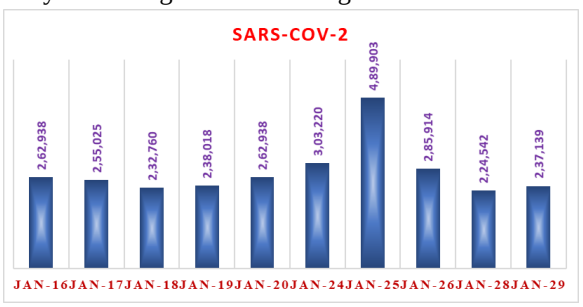
Graph.2. 11 days average of new cases SARS- CoV-2 Cases record in India. December 28 to January 17 daily increasing in covid-cases given the below table.



Graph.3. The chart shows the seven days averages of new covid cases recorded in India. The 11 days average for December to on January 17th.



Graph.4. last10 days average of new cases SARS-CoV-2 Cases record in India. January 16 to January 29 daily increasing in covid-cases given the below table.



Epidemiology

In South Africa, where Omicron was first reported and is now the dominant variant, there was marked decline in reported case of infection caused by the Omicron variant in week 52, with a total of 60 142 COVID-19 cases reported, a 48% decrease compared to the previous week. The incidence of hospitalization is also decreasing significantly, suggesting that the Omicron epidemic may have peaked in South Africa. Omicron was first identified by Net for Genomics Surveillance (NGS-SA) Organisation in South Africa. Omicron genome Code is B.1.1.529. Omicron genome Synthesis by multiple spike protein. Spikes proteins consists of 30 types of mutation.

These are (SARS-CoV-2) Alpha, Beta, Delta, Gamma, and Omicron, these genome variants Delta (B.1.617.2), Alpha (B.1.1.7), Beta (B.1.351), gamma (P.1), Mu (B.1.621), R.1., and Omicron (B.1.1.529). the most dangers variant omicron has new variant H655Y +N679K + P681H. In week 52 (26 December 2021-2 January 2022), the universal weekly incidence of COVID-19 has increased by 71% compared with the previous week, with the County of the Americas and the South-East Asia Region reporting the highest increases of 100% and 78%, respectively. The South-East Asia region had earlier seen a deterioration in the point of new cases since July 2021. Similar trends have been reported in a few other Southern African countries where Omicron trends closely followed that of South Africa, including: Eswatini (1806 vs 4667 cases comparing week 52 to week 51, a 60% decrease); Namibia (4398 vs 7625 cases, a 42% decrease), Lesotho (2161 vs 2862 cases, a 24% decrease) and Zimbabwe (10 468 vs 12 073 cases, a 13% decrease).

However, increases in the number of reported cases were seen in Mozambique (26 860 vs 6751 cases, a 298% increase) and Botswana (10 515 vs 9130 cases, a 15% increase). Efforts to rapidly accelerate COVID-19 vaccination coverage in at-risk population in all countries should be intensified. Particular focus among populations designated as high priority. Whose vaccination remains incomplete should be a priority for vaccination campaigns in all countries. In accordance with the SAGE, the priority for booster dose is to maintain and optimise vaccine effectiveness against severe disease outcomes, especially for those at high for serious disease. A risk-based approach to adjust international travel measure in a timely manner

is recommended. See WHO advice for international traffic in relation to the SARS-CoV-2 Omicron variant for additional information. Clinical care of patient with CVID-19, infected with any SARS-CoV-2 variant should be administered within health system, to evidence -based guideline, such as the who living guidelines for clinical management and therapeutics.

Enhance surveillance, including increase testing and sequencing efforts to understand

Circulating SARS CoV-2 variants, including omicron. Where capacity exists countries should perform field investigation such as household transmission studies. More data across different countries, are needed to understand how clinical markers of disease severity such as Oxygen use, mechanical ventilation, deaths are increased Omicron. WHO encourages? Other's countries to contribute to the collection and sharing of hospitalised patient data thought the WHO COVID-19 Clinical data platform. WHO's Indian representative Roderico H Ofrin said to WHO advises govt to adopt nuanced, targeted and risk -based approaches which involve layered control measures reducing the risk associated with travel and transmission. He said the emergence of the new variant of coronavirus in this magnitude has been beyond exception and it is evident Omicron has growth advantage over Delta spreading rapidly across states and territories.

WHO declared a variant as Variant of Concern (VoC) after assessment, there is increase in transmissibly change in COVID-19 Epidemiology or decrease in effectiveness of public health and social measures, available diagnostics, vaccines, therapeutics? (Source of WHO). Omicron cases so for had been asymptomatic or mild, hospitalisation and ICU cases had been increased in the current wave. The threat level remained unchanged. The recently the recently reported new SARS-CoV-2 Variant B.1.640.2-Lineage was being monitored there is no evidence of rapid spread and while it as features of immune escape, it is currently not a variant of concern. So, for no case has been detected in India the INSACOG said.

Omicron is now in community transmission in India and has become dominate in multiple metros, where new cases have been rising exponentially. BA.2 lineage is in a substantial fraction in India and S gene drop-out based screening is thus likely to give high false negatives. S-gene drop -out is a genetic variation like that omicron. The centre Covid research body also said BA.2 lineage, an infection sub variant of omicron has been detected in a considerable fraction in India.

Incidentally, the safety of vulnerable adults through vaccinating high-transmitting sub-youth and younger groups against SARS-CoV-2 was a method. vaccines are effective and against the asymptomatic infection Covid-19, ancestral virus the Alpha variant it was reduced by around 20% against Delta. (Singanayagam *et al*.,2021). UNICEF and WHO have developed some guidance, health, and safety are important considerations. how to transmission in schools and keep the school open, regardless of vaccination of school-aged children. Covid-19 control should facilitate children, social life and minimize school closures even without vaccination of children and adolescents. (UNESCO, UNICEF). WHO Strategy to achieve global covid-19 vaccination by mid-2022., it was proposed four objectives for vaccination programs to achieve the goal of full recovery from Covid-19 pandemic 1) minimize deaths, serve disease and overall disease burden., 2) restrict the health system impact. 3) fully French socioeconomic activity 4) condense the risk health system. Therefore, averting severe disease and deaths, and protecting the health system. (WHO. Strategy to Achieve Global Covid-19 Vaccination by mid-2022). This provisional guidance starts a major review of the WHO SAGE roadmap for arranging uses of COVID-19 vaccines, first issued October 2020, and updated in November 2020 and July 2021. It is based on work conducted by the SAGE Working Group on COVID-19 Vaccines and SAGE members, from October 2021 to January 2022, consultation with RITAG1 chairs, and dedicated discussions at extraordinary meetings of the Strategic Advisory Group of Experts (SAGE) on Immunization on 7 December 2021 and 19 January 2022.

MODE OF INFECTION

The disease can spread from person to person through small droplets from the nose or mouth which are spread a person with covid -19 coughs or exhales. These droplets land on objects and surfaces around the persons. Transmission can also occur if splashed or sprayed with contaminated fluids in the eyes, nose, mouth, and rarely, via contaminated surface on the body.

SYMPOTON OF OMICRON

Dr. Angelique said, omicron new symptoms including a scratchy throat, night sweats and extreme fatigue and muscle aches, Sings and serve acute respiratory systems and include fever, cough, and shortness of breath. In more serve cases, infection can cause pneumonia, serve acute respiratory syndrome and most effected organ is Lungs. Wilensky (CDC Chief) said, the disease is mild in almost all of the cases seen so far with reported: symptoms cough, congestion and fatigue. World health organisation officials said, the omicron coronavirus variant effecting the upper respiratory tract causing milder symptoms than previous variant and resulting "decoupling "in some places between soaring case numbers and low death rate.

WHO Said, Covid Symptoms are classified in 3 types?

- Most common symptoms: fever,
- cough,
- tiredness,
- loss of smell or taste.

Less common symptoms:

- sore throat,
- head ach,
- aches,
- pains,
- diarrhoea,
- a rash on skin discolouration of fingers or toes,
- red or irritated eyes.

Serious symptoms:

- difficulty breathing or shortness breathing,
- loss of speech or mobility, or confusion or chest pain.
- Finally serve acute respiratory

CAUSES OF INFECTED SARS-CoV-2

Now a days people lifestyle changes because of attractive the colourful changes surrounding, increase in towns and most of the people migrate village to towns, because no rains, no crops, good education school are not available, there is no daily labour works, no resources in village. Some people overeating food and no labour division. Milk, oils are contamination. Over sleeping, overeating carbohydrates food.

we have found many reasons, these are 1) Change to lifestyle. 2)We have been taken carbohydrate food. 3) Junk food. 4) Many people didn't have labour division and they think easy to earn. 5) Smoking and drinking. 6). No exercise. 7). Contaminated food and water. 8). Uses of refrigerators and air conditioners. 9). Overuse of pesticides. 10). Reduced the immunity or resistance power. 11). Over watching TV and Computer.

RESEMBLE RTROPICAL AND NON -TROPICAL REGIONS

In universal are classified based on tropical and non-tropical region. A special in both region one is cold region and another one hot area, based on this situation the omicron cases very easy spread to non- tropical region because of cold and low temperature, it is favourable condition of virus, such countries south Africa, USA, UK, Spain, Italy, Japan, Denmark, Russia, Turkey, Brigel. These are developed countries, they have many resources, peoples are reduced immunity by work tension, change the lifestyle, no labour division, they have taken junk food, no exercise, over use computer, have been eating carbohydrate's food, drinking, alcohol and drinking cold water. above this reasons, resistance and immunity decrease, due to pathogen are easy infected and cause many diseases. In these countries pathogens (omicron) are rapidly increased then tropical region countries,

Tropical region like India, Sri Lanka, Pakistan, Indonesia, and African countries. These countries had been very hot region, some viruses spread to very slow increase, these countries not developed and temperature very high, most of the peoples depend on labour division, and they go to daily labour work because of increase the resistance and immunity power. I'm studying and observing most of the rural area people are not affected by pathogen, like covid-2. Omicron viruses and Delta variant.

In India omicron cases increasing: Based on the potential availability of vaccines the government of India has selected the priority groups who will be vaccinated on priority as there are higher risk.

- The first group include healthcare and frontline workers.
- The second group receive COVID-19 vaccine was persons over 60 years of age and person between 45 to 59 years of age with comorbid condition. From April 1st ,2021.

- People above the age of 45 years are eligible to get COVID-19 vaccine. From May 1st, 2021.
- All eligible citizens above the age years can get the COVID-19 Vaccine.
- The average rate of daily COVID-19 vaccination in India dipped slightly between January 11 and 20 compared to the previous 10 days.
- During this period ,7.5 million doses were administered on average daily compared to the 7.7 million doses administered between Jan. 1and 10.
- Till January 23, 66.3% of the country 15 + population were fully vaccination. While 90.5 had received at least one dose.
- About 56.6% age group had received their last dose.
- INSACOG Said Omicron in immunity transmission most cases mild, but hospitalisation, ICU case UP.

PRECATION

1. Wear a musk that covers your nose and mouth.
2. Keep a physical distance at least 2 meters from others
3. Avoid poorly ventilated or crowded space.
4. Open windows to improve ventilation indoors.
5. Wash your hands regularly.
6. When it's your turn, get vaccinated.

EXPOSURE TO PATIENT: avoid direct contact with body fluids of the patient. use disposable gloves while handling the patient.
Avoid contaminated items in his immediate environment.
Food must be provided to the patient in his room.
Perform hand hygiene before and after removing gloves.
Use triple layer medical mask and disposable gloves.

TREATMENT FOR PATIENT WITH MILD OR ASYMPTOMATIC

Patient must be in communicable with treating medical officer.
Patient to follow symptomatic management for fever, running nose, cough, as warranted.
Patient perform warm water gargles or take steam inhalation thrice a day.
If fever is not controlled paracetamol 650 mg four times a day. advise to doctor.
Clinical management protocol for asymptomatic and mild patients as available on the website of Ministry of health & Family welfare. (http://www.icmr.gov.in /pdf/covid/techdoc/COVID Management Algorithm 23092021.pdf).
Do not rush for self-medication, blood investigation imaging like chest X ray and CT scan without consolation of your treating medical officer.
Steroids are not indicated in mild disease and shall not be self- administered.
In case of falling oxygen saturation breath, the person may require hospital admission and shall seek immediate consultation of their treating medical officer.

HOW TO IDENTIFICATION OMICRON

You have any symptoms such as fiver, cold, cough, difficulty breathing you will go to Diagnostic centres and given the sample below the testing.
PCR Test. (Polymerase chain reaction).
RDT (Rapid diagnostic test).
Swab Test: a sample from your nose or throat.
Blood Test: a blood sample is taken from a vein in the arm.
Sputum Test: sputum is thick mucus that gets accumulated in the lungs and come out with a cough. You require to cough up sputum is special cup or a swab is used to take a sample from your nose. RT-PCR is Commonly used method of diagnostic for SARS-CoV-2 Variant. It detects specific gene in the virus, such as spikes, Enveloped and Nucleocapsid etc to confirm presence virus. S gene is heavily mutated

CONCLUSION

Corona endemic phase in March all people must strictly avoid by the rules of the corona. The delta variant is omicron occupying the corona would have ended if new variant are not available Estimates of ICMR experts. Indian council medical research that corona is shaking the third wave country are breathing life people who are anxiously awaiting when the corona plague will break out should not neglect the covid-19. Those good days are likely to come in another two months if followed strictly. The corona endemic stage by March, Said Sameeran panda Chief

of ICMR Disease prevention unit. People should wear musk as shield, adheres to physical distance, often wash hands with sanitiser.

Therefore, individuals need to take measures such as isolation, proper ventilation, hand hygiene and use of personal protective equipment, mainly surgical masks, eye protection, gloves, and gowns to safeguard themselves from the disease. COVID-19 outbreak has challenged almost all sectors due to the spread of the disease at an alarming rate across the world. Notably, SARS-CoV-2 virus that poses a threat to public health. Currently, the disease has caused thousands of rapidly infections and death rate slowly. Ideally, the rapid spread of the illness calls for strong examination and isolation protocols to prevent additional spread. Fundamentally, no confirmed medicine or vaccine has been created to improve the health of patients with the condition.

DECLARATIONS

Ethics approval and consent to participate.
Not Applicable.

Availability of Date and Materials.
Not Applicable.

Competing Interest.
Not Competing interest.

Funding
Not funding

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