

The New South African Variant – Omicron

Introduction

As long as the coronavirus spreads through the population, mutations will continue to happen, there be more new coronavirus variants and the delta variant family will continue to evolve. New variants of the SARS-CoV-2 virus are detected every week.

Hence evolved the term, *Long Covid*.

Long COVID is a condition wherein people continue to experience COVID-19 symptoms for longer than usual after initially contracting the SARS-CoV-2 virus. Other terms for long COVID include post-COVID, post-acute COVID, long-tail COVID, and long-haul COVID. People with long COVID may refer to themselves as long haulers.

We should not be alarmed hence by new strains coming but know few basic facts as:

Coronaviruses die very quickly when exposed to the UV light in sunlight.

Like other enveloped viruses, SARS-CoV-2 survives longest when the temperature is at room temperature or lower, and when the relative humidity is low (<50%).

Several cases have now been identified in Europe - **two in the UK**, two in Germany, one in Belgium and another one in Italy, while a suspected case was found in the Czech Republic.

Israel, where the new variant has been confirmed, has decided to ban all foreigners from entering the country from midnight Sunday.

Omicron – Few facts

- Early evidence suggests Omicron has a higher re-infection risk.
- Spreads rapidly
- The patients are mostly complaining about a sore body and tiredness
- It in the younger generation, it's not the older people
- Virulence yet to be established but likely to be less (South African authorities agreed)
- Generally a virulent virus spreads less

- Hence at present spread is best controlled by restricting international travel from and to countries wherefrom reports of this virus has been reported
- **There have been many examples of variants that have seemed scary on paper, but came to nothing. The Beta variant was at the top of people's concerns at the beginning of the year because it was the best at escaping the immune system. But in the end it was the faster-spreading Delta that took over the world.**

Should vaccines keep increasing –a common query

To answer this one must know how actually a vaccine is prepared.

A vaccine has to be prepared through several steps or trials:

Vaccine trial phases includes:-

- Pre-clinical: Vaccine development in laboratory animals
- Phase 1 Clinical trial (small number of participants): Assess vaccine safety, immune response and determine right dosage (short duration)
- Phase 2 Clinical trial (few hundred participants): Assess safety and the ability of the vaccine to generate an immune response (short duration)
- Phase 3 Clinical trial (thousands of participants): Determine vaccine effectiveness against the disease and safety in a larger group of people (duration 1-2 years)

Measures taken to deal with advent of new Coronaviruses

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 of the virus. The TAG-VE was convened on 26 November 2021 to assess the SARS-CoV-2 variant: B.1.1.529 (The new South African strain or Omicron).

The B.1.1.529 variant was first reported to WHO from South Africa on 24 November 2021. The epidemiological situation in South Africa has been characterized by three distinct peaks in reported cases, the latest of which was predominantly the Delta variant.

In recent weeks, infections have increased steeply, coinciding with the detection of B.1.1.529 variant. The first known confirmed B.1.1.529 infection was from a specimen collected on 9 November 2021.

This variant has a large number of mutations, some of which are concerning. Preliminary evidence suggests an increased risk of reinfection with this variant, as compared to other VOC (variants of Concern).

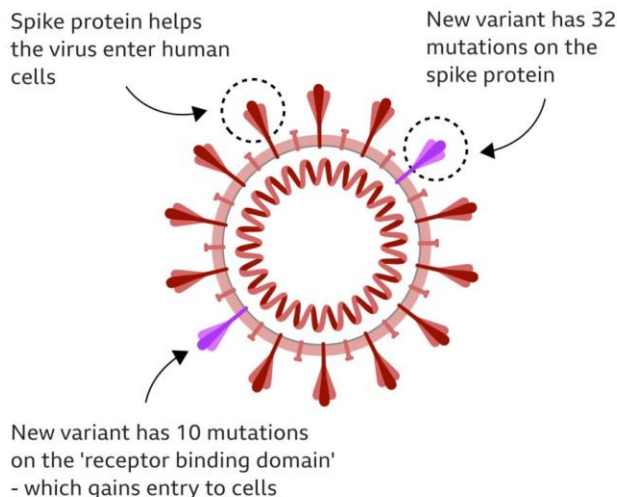
The number of cases of this variant appears to be increasing in almost all provinces in South Africa.

Current SARS-CoV-2 PCR diagnostics continue to detect this variant. Several labs have indicated that for one widely used PCR test, one of the three target genes is not detected (called S gene dropout or S gene target failure) and this test can therefore be used as marker for this variant, pending sequencing confirmation.

Using this approach, this variant has been detected at faster rates than previous surges in infection, suggesting that this variant may have a growth advantage.

The new Covid-19 variant: B.1.1.529

More mutations may make it spread faster



Source: South Africa Centre for Epidemic Response and Innovation

BBC

There are a number of studies underway and the TAG-VE will continue to evaluate this variant. WHO will communicate new findings with Member States and to the public as needed.

Based on the evidence presented indicative of a detrimental change in COVID-19 epidemiology, the TAG-VE has advised WHO that this variant should be designated as a VOC, and the WHO has designated B.1.1.529 as a VOC, named Omicron.

The WHO initiative

The World Health Organization (WHO) said on Friday that the new variant was "of concern"

Individuals are reminded to take measures to reduce their risk of COVID-19, including proven public health and social measures such as wearing well-fitting masks, hand hygiene, physical distancing, improving ventilation of indoor spaces, avoiding crowded spaces, and getting vaccinated.

As such, countries are asked to do the following:

- Enhance surveillance and sequencing efforts to better understand circulating SARS-CoV-2 variants.
- Submit complete genome sequences and associated metadata to a publicly available database, such as GISAID.
- Report initial cases/clusters associated with VOC infection to WHO through the IHR mechanism.
- Where capacity exists and in coordination with the international community, performs field investigations and laboratory assessments to improve understanding of the potential impacts of the VOC on COVID-19 epidemiology, severity, effectiveness of public health and social measures, diagnostic methods, immune responses, antibody neutralization, or other relevant characteristics.
- WHO has granted approval for emergency use to India's government-backed Covid-19 vaccine, Covaxin whereas,
- Sputnik V has been authorized for use in 70 countries around the world despite not yet being approved by the U.N. health agency even for emergency use.

WHO, in collaboration with partners, expert networks, national authorities, institutions and researchers have been monitoring and assessing the evolution of SARS-CoV-2 since January 2020.

During late 2020, the emergence of variants that posed an increased risk to global public health prompted the characterisation of specific Variants of Interest (VOIs) and Variants of Concern (VOCs), as well as VUM (variants under monitoring) in order to prioritise global monitoring and research, and ultimately to inform the ongoing response to the COVID-19 pandemic.

WHO and its international networks of experts are monitoring changes to the virus so that if significant amino acid substitutions are identified, we can inform countries and the public about any changes that may be needed to respond to the variant, and prevent its spread. Globally, systems have been established and are being strengthened to detect “signals” of potential VOIs or VOCs and assess these based on the risk posed to global public health. National authorities may choose to designate other variants of local interest/concern.

Naming SARS-CoV-2 variants

The established nomenclature systems for naming and tracking SARS-CoV-2 genetic lineages by GISAID, Nextstrain and Pango are currently and will remain in use by scientists and in scientific research.

To assist with public discussions of variants, WHO convened a group of scientists from the WHO Virus Evolution Working Group (now called the Technical Advisory Group on Virus Evolution), the WHO COVID-19 reference laboratory network, representatives from GISAID, Nextstrain, Pango and additional experts in virological, microbial nomenclature and communication from several countries and agencies to consider easy-to-pronounce and non-stigmatising labels for VOI and VOC and VUM.

At the present time, this expert group convened by WHO has recommended using letters of the Greek Alphabet, i.e., Alpha, Beta, Gamma, Delta which will be easier and more practical to be discussed by non-scientific audiences.

Variants of Concern (VOC)

Working definition:

A SARS-CoV-2 variant that meets the definition of a VOI (see below) and, through a comparative assessment, has been demonstrated to be associated with one or more of the following changes at a degree of global public health significance:

- Increase in transmissibility or detrimental change in COVID-19 epidemiology; OR
- Increase in virulence or change in clinical disease presentation; OR
- Decrease in effectiveness of public health and social measures or available diagnostics, vaccines, therapeutics.

Currently designated Variants of Concern (VOCs) :

WHO label	Pango lineage*	GISAID clade	Nextstrain clade	Additional amino acid changes monitored	Earliest documented samples	Date of designation
Alpha	B.1.1.7	GRY	20I (V1)	+S:484K +S:452R	United Kingdom, Sep-2020	18-Dec-2020
Beta	B.1.351	GH/501Y.V2	20H (V2)	+S:L18F	South Africa, May-2020	18-Dec-2020
Gamma	P.1	GR/501Y.V3	20J (V3)	+S:681H	Brazil, Nov-2020	11-Jan-2021
Delta	B.1.617.2	G/478K.V1	21A, 21I, 21J	+S:417N +S:484K	India, Oct-2020	VOI: 4-Apr-2021 VOC: 11-May-2021
Omicron*	B.1.1.529	GR/484A	21K	-	Multiple countries, Nov-2021	VUM: 24-Nov-2021 VOC: 26-

WHO lab el	Pango lineage *	GISAID clade	Nextstrain cla de	Additional amin o acid changes monitor ed	Earliest documente d samples	Date of designatio n
						Nov-2021

Variants of Interest (VOI)

A SARS-CoV-2 variant:

- With genetic changes that are predicted or known to affect virus characteristics such as transmissibility, disease severity, immune escape, diagnostic or therapeutic escape; AND
- Identified to cause significant community transmission or multiple COVID-19 clusters, in multiple countries with increasing relative prevalence alongside increasing number of cases over time, or other apparent epidemiological impacts to suggest an emerging risk to global public health.

Primary actions by a Member State, if a new potential VOI is identified:

- Inform WHO through established WHO Country or Regional Office reporting channels with supporting information about VOI-associated cases (person, place, and time, clinical and other relevant characteristics).
- Submit complete genome sequences and associated metadata to a publicly available database, such as GISAID.
- Perform field investigations to improve understanding of the potential impacts of the VOI on COVID-19 epidemiology, severity, effectiveness of public health and social measures, or other relevant characteristics.

- Perform laboratory assessments according to capacity or contact WHO for support to conduct laboratory assessments on the impact of the VOI on relevant topics.

Rapid spread of information by media may be publicity stunts – But facts should be more searched and media at this moment is expected to be more responsible.

South Africa has complained it is being punished - instead of applauded - for discovering Omicron, a concerning new variant of Covid-19.

- The foreign ministry made the statement as countries around the world restricted travel from southern Africa as details of the spread emerged.
- Cause of sudden blast of OMICRON – AS GIVEN BY South African authorities
- South Africa's vaccination programme has slowed in recent months - not because of a lack of supplies, but due to public indifference.
- An estimated 42% of the population has had at least one jab. But roughly two-thirds of those aged over 60 have been vaccinated.
- Experts are hopeful that the variant may help encourage more people to get jabbed.
- The government has urged people to come forward, saying: "Let us crush the power of the new variant by vaccinating to limit the number of mutations."
- This variant is more contagious but the current vaccines are likely to reduce morbidity.
- They might not be as effective in terms of preventing people getting infected.
- All the more reason, if there is a more contagious variant that should go out and get more people vaccinated.
- As the bigger concern is the potential impact of the variant if it spreads to other parts of the continent where, on average, roughly 3% of the population has been vaccinated.
- The head of the South African Medical Association told the BBC that the cases found so far in South Africa - where only about 24% of the population is fully vaccinated - were not severe, but said investigations into the variant were still at a very early stage.
- The WHO has warned against countries hastily imposing travel restrictions, saying they should look to a "risk-based and scientific approach".

South Africa has also growing concerns and should be understood by the world media as a whole.

The latest is the most heavily mutated version discovered so far - and it has such a long list of mutations that it was described by one scientist as "horrific", while another told it was the worst variant they'd seen.

It is early days and the confirmed cases are still mostly concentrated in one province in South Africa, but there are hints it may have spread further.

Immediately there are questions around how quickly the new variant spreads, its ability to bypass some of the protection given by vaccines and what should be done about it.

It is also incredibly heavily mutated. Prof Tulio de Oliveira, the director of the Centre for Epidemic Response and Innovation in South Africa, said there was an "unusual constellation of mutations" and that it was "very different" to other variants that have circulated.

In a media briefing Prof de Oliveira said there were 50 mutations overall and more than 30 on the spike protein, which is the target of most vaccines and the key the virus uses to unlock the doorway into our body's cells.

This level of mutation has most likely come from a single patient who was unable to beat the virus.

A lot of mutation doesn't automatically mean: bad.

It is important to know what those mutations are actually doing.

But the concern is this virus is now radically different to the original that emerged in Wuhan, China.

That means vaccines, which were designed using the original strain, may not be as effective.

Some of the mutations have been seen before in other variants, which gives some insight into their likely role in this variant.

Scientific studies in the laboratory will give a clearer picture, but answers will come more quickly from monitoring the virus in the real world.

It is still early to draw clear conclusions, but there are already signs that are causing worry.

There have been 77 fully confirmed cases in Gauteng province in South Africa, four cases in Botswana and one in Hong Kong (which is directly linked to travel from South Africa). Israel and Belgium have also reported cases.

However, there are clues the variant has spread even more widely.

This variant seems to give quirky results (known as an S-gene dropout) in the standard tests and that can be used to track the variant without doing a full genetic analysis.

That suggests 90% of cases in Gauteng may already be this variant and it "may already be present in most provinces" in South Africa.

But this does not tell us whether it spreads faster than Delta, is any more severe or to what extent it can evade the immune protection that comes from vaccination.

It also does not tell us how well the variant will spread in countries with much higher vaccination rates than the 24% of South Africa that is fully vaccinated, although large numbers of people in the country have had Covid.

So for now we are left with a variant that raises significant concerns despite huge holes in our knowledge, and is one that needs to be watched closely and asks deep questions about what to do and when.

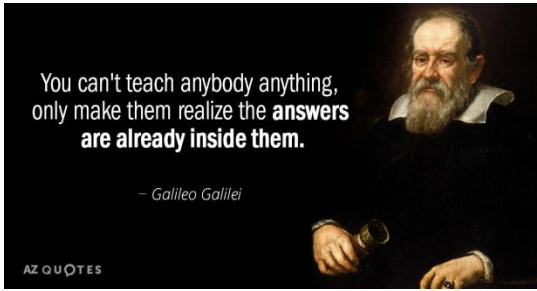
The lesson of the pandemic is you can't always wait until you have all the answers.

The WHO said it would take a few weeks to understand the impact of the new variant, as scientists worked to determine how transmissible it was.

Summary

- So most important call of the day is to vaccinate as many people as possible rather than panic about Corona virus. It was there since ages, changed through ages, brought epidemics, then pandemic and will continue to do so.

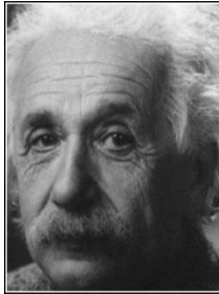
- **Rather it's a matter of pride that The National COVID-19 vaccination drive of India is world's largest vaccination drive and has been unprecedented in both scale and reach.**
- Comparative assessment of variant characteristics and public health risks by WHO.
- If determined necessary, coordinated laboratory investigations with Member States and partners.
- Review global epidemiology of VOI and simultaneously monitor and track global spread of VOI
- So as and when Corona virus change, which will continue as per nature's rule, there is no need to keep increasing vaccines, unless waiting the results of already those prepared and subjecting the whole world to an unidirectional financial crisis as well as neglecting the already existing several deadly diseases in either pockets (malaria, dengue etc in poor nations), (non infective diseases like heart or strokes in economically developed nations) or Cancer, HIV etc in the whole world in general.
- *Reducing transmission through established and proven disease control methods/measures, as well as avoiding introductions into animal populations (increasing fear leading to increasing experimental vaccines thereby using animals and spreading it in them) rather are crucial aspects of the global strategy to reduce the occurrence of mutations that have negative public health implications.*
- **There is a lot of speculation, but there are very few clear answers.**
- *Final word of caution is thus mutants will keep coming, but should not raise panic and media should be responsible and judgemental as well as Governments to take their own measures to save their countries and finally leave time to judge on already existing vaccines and the rest of responsibilities ,WHO will carry out.*
- The world is not going to see its end by Covid. There have been worse existing diseases, still unanswered.
- Courage and precautions, as per the call of the day can only bring an end to this pandemic.
- The disease is hard to tackle, but not invincible.



You can't teach anybody anything,
only make them realize the **answers**
are already inside them.

— Galileo Galilei

AZ QUOTES



We are slowed down sound and light
waves, a walking bundle of frequencies
tuned into the cosmos. We are souls
dressed up in sacred biochemical
garments and our bodies are the
instruments through which our souls
play their music.

— Albert Einstein —

AZ QUOTES



So remember to look up at the stars
and not down at your feet. Try to
make sense of what you see and
hold on to that childlike wonder
about what makes the universe
exist.

— Stephen Hawking —

AZ QUOTES