



A Comprehensive Review on Omicron BF.7

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ABSTRACT

Since the World Health Organization (WHO) discovered the novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), in Wuhan, China, in late 2019, it has been spreading quickly and has caused a global pandemic. More than 64 million confirmed cases and 6,645,812 fatalities had been reported globally as of 19 December 2022. The SARS-CoV-2 developed genetic changes throughout time, giving rise to numerous types of proven SARS-CoV-2 variants and subvariants. Due to changes in the SARS-CoV-2 spike protein, the Omicron (B.1.1.529) variation was discovered later in November 2021. It had improved immune evasion and was followed by several sublineages. However, the worrisome global threat caused by the sudden increase in COVID-19 reports by Omicron subvariant BF.7(BA.2.75.2) in China and other nations. The "Omicron" AND "BA.5.2.1.7" OR "BF.7" in Pub Med, Google Scholar, and MedRxiv databases, as well as grey literature from reliable databases and websites, were used to conduct the current systematic review. A total of 14 published studies have been found. To study viral alterations, variables linked to a surge in reports of COVID-19 cases in China and around the world, and to assess the efficacy of vaccination and monoclonal antibodies against BF.7 variant, we have analysed all the research that are eligible and currently available. A number of new Omicron subvariants, including BQ.1, BQ.1.1, BA.4.6, BF.7, and BA.2.75.2, have appeared as a result of the SARS-CoV-2 virus' ongoing development. All of the novel subvariants that we identified had increased neutralisation resistance, but the BQ.1 and BQ.1.1 subvariants—driven mostly by their respective F486S mutations—and the BA.2.75.2 subvariant—driven primarily by their respective R346T and K444T mutations—were particularly affected. Interestingly, the D1199N mutation decreased the fusogenicity and S processing of the BA.2.75.2 subvariant, whereas the F486S mutation increased both. As a result, there was little overall change.

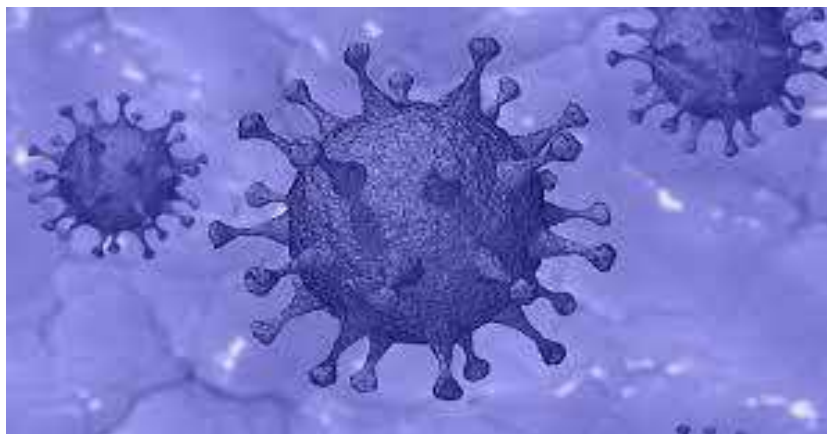
These findings collectively give light on the worrying evolution of recently discovered SARS-CoV-2 Omicron subvariants.

Keywords: Omicron BF.7, Covid-19, SARS-CoV-2 Omicron

Introduction

The number of Corona virus cases has been rising globally since the beginning of November. India has the situation under control now, but China is having a terrible time with it. According to some estimations, China faces a two million person mortality risk as a result of the recent spike. Even an e Many nations are concerned about the corona outbreak in China, but India is not seriously threatened. Covid was subject to limitations in China up until a few months ago. The state of medicine in China is deteriorating as a result of inadequate policies. There, Omicron's bf.7 version is also having a significant impact.

While this variation had recently arrived in India, it had no impact there. epidemiologist stated that 60% of China's population would contract the disease in the next months.



Omicron BF.7

How was the name BF.7 given to the new variant?

BF.7 is actually an abbreviation. Name in full: BA.5.2.1.7. This is a sub-variant of the BA.5 variation of Omicron. Globally, Omicron's BA.5 variation has the most cases that have been documented. Approximately 76.2% of all cases. The BA.4 and BA.5 sub-variants, however, did not become widely distributed in India. We have the most BA.2.75 instances than anyone else.

The Corona Virus Is Changing, And Changes Can Produce Many Variants And Sub-Variants. Convergent evolution is the name of this process. Names for these subvariants include BA.2.75.2, BF.7, and BQ.1.1. These names are based on which sub-variant is descended from which variant.

How harmful is the Omicron sub-variant?

According to reports coming out of China, BF.7 is riskier than the other Omicron sub-variants. Due to how quickly it spreads, it has the maximum transmissibility. Many people can contract BF.7 from one infected person.

The remaining Omicron variants have shorter incubation times and can infect, on average, 4 individuals. The interval between being exposed to the virus and the onset of the first symptoms is known as the incubation period. In other words, you can catch BF.7 as soon as you come into contact with it.

Has BF.7 arrived in India as well?

In the wave earlier this year, the Omicron subvariants BA.1 and BA.2 were discovered. BA.4 and BA.5 also arrived later. However, both of them wreaked more havoc in nations of Europe. In India, BF.7 instances were also extremely rare. This variation has been discovered in Gujarat and Odisha in India, where one case each were reported in July, September, and November.

India's BF.7 Covid Variant

In July, the traces of the BF 7 Covid Variant were discovered. The incubation period for the BF 7 Covid Variant is brief. It also exhibits a trend of reinfection. In India, the cases were first reported in Gujarat and then subsequently in Odisha. The Gujarat Biotechnology Research Centre discovered it in October.

This Thursday, Shri Narendra Modi, our Prime Minister, will speak at the gathering and investigate the situation. Mansukh Mandaviya, a Union Minister, has already assessed the situation and has advised people to abide by the Covid protocol that the government previously provided. It is advised to use masks and stay away from busy areas. Even if more than half of the population receives the vaccination dose, we still need to exercise caution because it is also being found in those who have had the immunisation.

Symptoms- BF.7

The signs of this variant are comparable to those of the other Omicron subvariants. A person who is infected may exhibit fever, cough, sore throat, runny nose, tiredness, vomiting, and diarrhoea as symptoms. In those with compromised immune systems, this sub-variant can result in serious illness. Someone should get the Covid test done if they have been experiencing persistent physical pain. In addition, other symptoms include a sore throat, exhaustion, phlegm, and a runny nose.

Here are the top most reported symptoms:

- Sore Throat
- Runny Nose
- Blocked Nose
- Sneezing
- Cough Without Phlegm
- Headache
- Cough With Phlegm
- Hoarse Voice
- Muscle Aches And Pains
- An Altered Sense of Smell

Omicron BF.7: Precautions

As of December 2022, between 27 and 28% of India's eligible population had received the Covid-19 preventive dose. The Covid vaccine and booster injections can help prevent complications brought on by the subvariants.

The first and most crucial defence is to wear a mask in busy areas and take booster doses. Social isolation and maintaining good cleanliness are two approaches to stop the spread of the variation.

With the holiday season soon approaching, those with compromised immune systems should exercise additional caution. You must keep yourself clean. The most effective strategy to lessen Omicron BF risk Test-Track-Treat-Vaccinate is variation 7. You can schedule a test at home or visit your nearby Metropolis Lab for Covid 19 Testing.

Physical distance: Corona is spread through direct contact with an infected individual, therefore it's crucial to keep your distance in order to prevent getting it. The American CDC advises keeping a distance of at least 6 feet from individuals in public areas to prevent infection. You can avoid catching a cough or sneeze from someone by keeping your distance.

Wear a Mask: When you leave the house, you should wear a mask. You can prevent infection drops by doing this. The mask also guards against other infections like the flu, cold, and cough in addition to the corona virus. After using the mask once, discard it. Use a mask of decent quality as well.

Get a booster dose: Get the booster dose of Covid right now if you haven't already. Since there is now no treatment for Corona infection, only the vaccine can significantly protect us from its severe effects.

Avoid going crowded places: You also need to limit your time outdoors and spend as much time indoors as possible to prevent corona infection.

Take care of cleanliness: In order to prevent infection, wash your hands after handling anything or someone that has the corona virus. Before washing your hands with water, first put soap on them and rub them for a short while.

Use a sanitizer: When you go outside use a sanitizer, if soap and water are not available then use a sanitizer.

No particular safety measures are necessary when using the Omicron BF.7 version. To safeguard oneself from the virus, people only need to adhere to the procedures listed below.

- Always wear a well fitted mask when going to public places.
- Get your vaccination doses and the booster doses.
- Wash your hands regularly.
- Never touch your eyes, nose and mouth without washing your hands.
- Look out for the symptoms of infection and seek medical attention immediately if you have any of the symptoms.
- Avoid crowds and keep a physical distance from other people.
- Cover your mouth with a handkerchief or your elbow every time you sneeze or cough.
- Avoid close contact with people who are infected with the BF.7 variant.
- There are many Covid BF 7 Variant Precautions which you need to follow and major ones are discussed here in this post.
- First one is that all of you must have done both the doses of Covid Vaccine and also taken the Booster Dose.
- Secondly, you must wear the Mask all the time while visiting out of the house and use the sanitizer frequently.
- Eat the nutrients and increase your immunity to get protected from the different variants coming out of the Coronavirus.
- Maintain Social Distance at all the Public Places and avoid going to crowded places to stay away from the infection.

BF.7 Covid Variant Severity

The intensity of BF.7 Covid Variant is greater than anything the world has ever experienced. People who are older and have a history of conditions like heart disease, diabetes, or any respiratory disorders are more likely than others to experience the effects seriously.

According to reports, it has the best ability to spread from one person to another. The quantity is also higher than in past studies. "Omicron usually targets the upper respiratory tract, and a few individuals could develop pneumonia, but most won't experience respiratory failure," according to Wang Guiqiang, a consultant to the NHC.

Covid Variant BF.7 Vaccine

The worst part is that infections are also discovered in people who have had the Covid -19 virus vaccine. According to information on the development of the vaccine, China is administering doses to those who are infected.

Due to poor immunity levels among humans, the Covid Variant BF 7 is spreading rapidly. The 28% of Indian population who receive the booster dose. As of right now, no steps are being made for the purpose of treatment. Check our portal's Health section to see if you took the Booster dose. We have given all the details. You can get registered and reserve a spot for you and a loved one by following the step-by-step instructions.

COVID-19 Variants

Since it first infected humans, the COVID-19 has been changing. It can now infect many people at once due to evolution and an increase in its infectious rate. The virus is not dangerous on its own, but it can be fatal if it infects a person who has a compromised immune system. There are numerous variations of the virus, however the ones listed here are the most dangerous and notable.

1. Delta—The B.1.617.2 variant is another name for the Delta variant. In the month of October 2020, it was first found. It was extremely contagious, but no longer affects humans.
2. Beta- The Sars-CoV-2 virus's initial mutation, which was detected in May 2020, had already spread far and been responsible for a significant number of fatalities.
3. Alpha: In September 2020, the Alpha version was uncovered. Compared to the Beta version, it was more contagious. As a result of the virus's mutation into new forms, it is no longer available.
4. Gamma—Discovered in November 2020, the Gamma version was both more lethal and contagious than any of the other types. It is no longer in use since it has changed.
5. Omicron: The COVID-19 virus's most recent mutation is the Omicron variation. Although it is exceedingly contagious, it is not especially deadly. The Omicron variation is evolving into subvariants as a result of self-mutation. BF.7, the most recent Sub-Variant, is currently operational in China.

COVID Omicron BF.7 Severity

Despite being highly contagious, the COVID Omicron BF.7 variant infection is not dangerous. In those with a strong immune system, the illness may go away on its own. However, infections can be more severe and even fatal in those who have lowered immunity or other medical issues.

Persons with weak immune systems, such as those who have diabetes, high blood pressure, are more vulnerable to infection than healthy individuals. Older people, infants, and those taking long-term chemotherapy are also more at risk.

Covid 19 BF.7 Vaccine

Virus	Covid-19
Strain Name	Covid 19 BF.7
Surfaced in	China and other Countries
Countries Facing this strain	90+ Countries
Strain Released in Year	2022
Symptoms	Sore Throat, Mild Fever, Indigestion, Chest Problems and more
Covid 19 BF.7 Vaccine	Booster Dose
Eligibility For Vaccine	Dose 1 and Dose 2

A new strain known as BF.7 poses a threat to all Indian citizens as well as people anywhere else. Get the booster dose of the Covid 19 BF.7 vaccine if you experience any of the symptoms listed above. You should get over to the nearby Covid Vaccination Center as soon as possible to acquire a booster dose so that you can protect yourself. To be protected from this variation, be sure to carry your E Aadhar Card or a hard copy of your Aadhar Card.

Omicron BF.7 Variant Home Remedies

- First of all, you should get jabbed with Booster Dose or Protection Dose in the coming days from the nearest vaccination centre.
- Secondly, you must try to wear a Triple Layer Mask because this variant is highly transmissible.
- Thirdly, you should maintain social distance at all public places and avoid visiting crowded places.
- International Travel must be avoided by the citizens because Airports are the centerpoint of infections.
- In this way, you can get Protected from Coronavirus BF.7 Variant.

Covid BF.7 Cases in India

- Many cases are being seen in India and Other Countries as per statistics available on WHO Portal.

- Government is also working and holding meetings to keep a tab on Covid BF 7 Cases in India.
- Currently, 100's of cases are coming from different states but these are very less dangerous.

Reproductive Number of this strain is from 15 to 18.2 as per World Health Organization.

Who Has a Higher Chance of Contacting an Omicron BF.7 Variant Infection?

Unvaccinated people are more at risk. Additionally, those with compromised immune systems are more susceptible to getting this illness, such as youngsters, the elderly, pregnant women, and people with multiple comorbidities such uncontrolled diabetes, cancer, renal, or heart disease.

People should follow Covid-appropriate behaviour guidelines and get vaccinated against Covid-19 as a preventative step.

Can COVID BF.7 cause life-threatening diseases?

The BF.7 is a sub-lineage of the Omicron variety BA.5, which Dr. Rajeev Jayadevan, Co-Chairman of the National IMA Covid taskforce, has referred to as the "great-grandson of Omicron." According to him, the BF.7 variation exhibits immune evasiveness, which is the capacity to infect persons who have already been exposed to an infection or who have received a vaccination. There is no proof that it results in more serious illnesses, though.

The Omicron strain, according to Dr. Jayadevan, was discovered for the first time in South Africa in November 2021 and quickly spread over the world in just one and a half months. The BA.1 variety was discovered first in India, and was then followed by the BA.2 variant, which brought on the third wave in January–February 2022. Since then, the children of the BA.2 variety have been circulating in India without leading to any notable outbreaks. Dr. Jayadevan explains that this is because people who have previously contracted Covid-19 have high vaccination rates and have developed immunity on their own. There was not a similar rise in cases associated with BA.5 in many regions of India when the subsequent BA.5 variant of Omicron impacted Western nations.

What does BF.7 stand for?

The BA.5 Omicron subvariant is a sublineage of the new subvariant BF.7, abbreviated BA.5.2.1.7. Since the 2019 discovery of SARS-CoV-2, this subvariant is reportedly the most contagious one ever. Compared to the Delta BA.1, BA.2, and BA.5 variations previously discovered, BF.7 is thought to be very infectious. It is thought to spread more quickly than the preceding variations and can affect people who have already had COVID infections, received the COVID vaccine, or both. Due to more changes in its spike protein than in its base form, it has a higher potential to reinfect or infect even those who have received vaccinations. This variation is reported to have a better capacity to elude the detection than the previously identified BA.1, BA.2, and BA.5 variants.

Its reproduction number, or RO, is 10 to 18.6, as opposed to Delta's RO of 5 or 6. This indicates that one sick person can spread the variation to 10 to 18.6 more people.

BF.7 mutation

With the development of SARS-CoV-2 and its several variants, including Omicron, new sub-variants have clearly emerged that are more suited to evade immunity from immunisation or prior infection. Nothing has changed with the BF.7 sub-variant that is creating the present endemic.

It has been established that the specific mutation R346T exists in the SARS-CoV-2 spike protein of the BF.7 subvariant, which is a protein on the virus's surface that allows it to bind to and infect our cells. The "parent" version of BF.7, BA.5, carries this mutation, which aids the virus in evading neutralising antibodies made by immunisation or earlier infection.

The neutralisation of BF.7 in sera (a blood component that should include antibodies) from triple-vaccinated medical personnel and patients who got the virus during the Omicron BA.1 and BA.5 waves of the pandemic was recently studied. BF.7 was resistant to neutralisation, in part because of the R346T mutation.

Condition in China

Because of its high rate of transmission and the potential for concealed spread caused by a large number of asymptomatic carriers, Omicron BF.7, the main strain in the COVID flare-up in Beijing, is regarded to be making it more difficult to manage the epidemic in China. Since the coronavirus pandemic started more than three years ago, China is arguably going through its most significant public health crisis. The low RO of BF.7 may be caused by the Chinese population's poor immunity from the past infection and possible vaccination.

Amid this unprecedented surge, the World Health Organization (WHO) has also voiced concerns about how the situation is developing in China and encouraged the authorities to intensify the vaccination campaign for the most susceptible people. According to a recent study, COVID-19 could cause roughly one million deaths within a few months. However, two other studies discovered that a fourth vaccination drive, along with rigorous adherence to masks and the reinstatement of temporary limitations on social connections should mortality rates spike, might lower the number of deaths for the majority of the population.

Condition around the world

Other countries where BF.7 has been identified include India, the US, the UK, and numerous European nations like France, Belgium, Germany, and Denmark.

Despite its alarming proliferation in China and immune-evasive traits, BF.7 is still relatively stable in other parts of the world despite its high infectivity. For instance, as of December 10, it was predicted to be the cause of 5.7% of infections in the US, down from 6.6% the week prior.

BF.7 has recently been de-escalated due to low growth rates and fewer infections in the UK, although accounting for over 7% of cases when it was first named by the UK Health Security Agency as one of the most alarming varieties in a technical briefing published in October.

Data from China must be carefully considered in evidence-based medical practise because it is based on reports and has not yet undergone peer review.

CONCLUSION

There is no doubt that the present COVID-19 outbreak is a global public health issue. Our understanding of the pathogen, how it affects cells and produces disease, and the clinical features of disease have all advanced quickly. Countries all around the world should pay more attention to disease surveillance systems and scale up country readiness and response operations, including setting up quick response teams and enhancing the capability of the national laboratory system, due to the rapid transmission of diseases.

The economic, medical, and public health infrastructure in China as well as, to some extent, in other nations, particularly its neighbours, has been put to the test by this recent virus outbreak. How the virus will affect our life here in India will only become clear with time. Therefore, zoonotic virus and disease outbreaks are expected to persist in the future. Hence, efforts should be made to develop comprehensive strategies to prevent future outbreaks of zoonotic origin in addition to containing this outbreak.

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