



Newer emerging SARS-COV2 variant: Omicron EG.5

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In December 2019, Wuhan City in China announced the first case of COVID-19 infection. Till date, a total of 690 170 546 cases of COVID-19 infections and 6 902 992 deaths have been recorded. The WHO report indicates that from 12 June to 9 July 2023, there were ~794 000 new COVID-19 infections reported worldwide, along with 4800 fatalities^[1]. By accumulating mutations, SARS-COV2 is evolving. Hence, it's conceivable that additional variants may appear^[2]. The COVID-19 virus variants were categorized by the WHO into three groups: variants of concern (VOCs), variants under monitoring (VUMs), and variants of interest (VOIs). There have been three distinct COVID-19 waves documented till now. The L, S, G, GR, and GH clades of SARS-CoV2 dominated the first wave of COVID-19, which started in March 2020. Beginning in March 2021, the second wave was primarily caused by the Delta variant (Alpha-B.1.617). During the second wave of the COVID-19 pandemic, several additional variants with pathogenicity greater than alpha variants (B.1.618 triple mutant), B.1.351 (Beta), and P.1 (Gamma) were also prevalent^[3]. The third wave of the COVID-19 pandemic has predominantly been the Omicron variant. The first case of Omicron (B.1.1.529) infection was reported from Botswana, South Africa in November 2021. Due to its higher transmissibility and virulence, WHO declared Omicron a VOCs on 26 November 2021. Omicron is the most divergent variants with 26–32 mutations in spike proteins, N terminal domain and, receptor binding sites. These mutations are responsible for higher virulence and transmissibility^[4]. The genomic surveillance by whole-genomic sequencing during the third wave confirmed the role of Omicron variants (B.1.1.529; 98%) in the increase in

COVID-19 infections. Omicron variants predominated between January 2022 and May 2023, states the Centers for Disease Control and Prevention (CDC). Initially, BA 1.1 dominance occurred in January 2022, followed by BA.2 prevalence in March 2022 and BA.5 prevalence in July 2022. Later, Omicron sub lineages BA.2, BA.4, and BA.5 predominated. WHO has recognized five (BA.1, BA.2, BA.3, BA.4, and BA.5) subvariants of omicron as VOCs^[5].

Although the proportion of COVID-19 infections and associated mortality and morbidity notably decreased in 2023, the circulating variants included XBB1.5, XBB1.9.1, and XBB1.16 with the K478R mutation and a longer doubling time. However, the ongoing development of omicron lineages underscores the usefulness of genomic surveillance for keeping track of emerging variants that will aid in the creation of innovative medications and vaccines^[1,6,7]. Furthermore, decreased testing and reporting could have been a contributing factor in the decline in cases of COVID and deaths. Additionally, barely a small number of nations regularly update their hospitalization and fatality records. Several nations fail to report ICU admissions due to COVID-19 infections. Malta as a whole has seen an increase in hospitalization (20%) during the last 28 days. Pacific nations like Australia reported a 20% increase in COVID-19 cases in 1 month^[1].

Omicron variants were categorized as Omicron VOCs in an earlier taxonomy. It made it difficult to compare novel variants with parent lineage (BA.1, BA.2, BA.4/BA.5) because they had altered phenotypes^[8,9]. On 15 March 2023, WHO suggested that Omicron variants be tracked separately as VOIs, VOCs, and VUMs. A novel Omicron variant EG.5, from lineage XBB.1.9.2, has been discovered. It possesses extra mutation in the spike protein. Globally, it is becoming more prevalent. Because the number of infections caused by other variants has greatly decreased, the WHO added this variant as a VUM for COVID-19 tracking on 21 July 2023. There are now seven different VUMs (Table 1). Two variants remain of importance, XBB.1.5, which is progressively falling, and XBB.1.16, which is stable at 20.7% of sequences^[1,10].

In the USA, the prevalence of omicron EG.5 was 13%, according to the CDC (until July 8, 2023). Regarding the involvement of EG.5 in escalating COVID-19 infections and fatalities, there is no concrete proof at this time. Its capacity for transmission and virulence (morbidity/mortality) has not yet been established^[11–13]. Omicron EG.5 infections are yet to be reported in South Asian nations like Bangladesh, India, or Nepal. On 27 July 2023, India reported eight deaths and 1542 cases of COVID-19 infections. About 5 28 913 people have died as a result of COVID-19 infections overall, and around 26 449 active COVID-19 cases at this time^[14–16].

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Table 1

Current list of variants under monitoring (VUMs) as per WHO (adopted from Weekly epidemiological update on COVID-19—13 July 2023)^[1,10]

Variant name	Lineage	Countries detected (21–25-week 2023)	Sequences (21–25-week 2023)	Evidence on transmissibility
BA.2.75 ^a	Omicron	124	121701	Not available
CH.1.1 ^a	Omicron	95	42426	Not available
XBB ^a	Omicron	130	64219	Not available
XBB.1.9.1 ^a	Omicron	98	45603	Not available
XBB.1.9.2 ^a	Omicron	83	24091	Not available
XBB.2.3 ^a	Omicron	64	7020	Not available
EG.5 ^a	Omicron	In the USA	NA	Not available
Other	NA	209	6753503	Not available

^aIncludes descendant lineages, except those individually specified elsewhere in the table. For example, XBB does not include XBB.1.5, XBB.1.9.1, XBB.1.9.2, XBB.1.16, and XBB.2.3.

WHO also recommended that the guidelines for COVID-19 remain unaltered and requested all member countries to continue genomic surveillance via sequencing as the COVID-19 virus will continue to gain mutations and evolve. Based on the recently available evidence, the public health risk by EG.5 is as low as other VOIs. New variants will keep on evolving but there should be no cause for concern till the trajectory follows the path of the pandemic as had happened. Also, understanding the lineage of circulating variants necessitates whole genome sequencing of fresh samples. Additionally, WHO urged member nations to adopt the COVID protocol in public places, create their health-care infrastructures, and continue to operate their current facilities.

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All data used to support the findings of this study are included in the article.

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