

Perspective

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Mapping COVID-19 in India: Southern states at the forefront of new JN.1 variant

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A new variant, JN.1, stemming from the omicron subvariant BA.2.86, garnered the attention of the World Health Organization (WHO) as a "variant of interest." Despite its rapid global spread, especially in the US, Canada, France, Singapore, Sweden[1], and the UK, JN.1 is considered to pose minimal danger. Current vaccinations are believed to remain effective against it. The WHO underscores the importance of maintaining immunization records amid co-occurring respiratory illnesses, and epidemiologists recommend monitoring hospitalizations, particularly in areas with low vaccination rates. Despite concerns, experts anticipate JN.1's impact to be less severe than that of the omicron variant[2]. The southern states of India are more affected by the current COVID-19 outbreak than the northern states. As we have seen, Kerala, a southern state in India, reported the first case of COVID-19 back in 2020. As a result, it has established a recurring pattern, with the southern Indian states being the most affected as compared to the northern states. India reported 4091 active COVID-19 cases and five fatalities on December 29, 2023. Based on data from the Union Health Ministry, the state-wise distribution showed that Kerala had the most cases (2522), followed by Karnataka (568), Maharashtra (369), and Tamil Nadu (156). December 29, 2023 witnessed the largest single-day spike in COVID-19 infections, with 654 new cases reported all over India. Karnataka and Maharashtra had 96 and 50 new cases, respectively[3]. Figure 1A shows cases of COVID-19 in India which is dominated by the southern states which include Kerala, Karnataka and Tamil Nadu as compared to the northern states.

On December 8, 2023, at Karakulam, Thiruvananthapuram, Kerala, a positive RT-PCR sample revealed the first case of JN.1. "No cause for panic (over JN.1 subvariant)," stated Chief Dr. NK Arora of the Indian SARS-CoV-2 Genomics Consortium (INSACOG), a network of laboratories that tracks genomic variants of the COVID-19 virus. Upper respiratory symptoms were induced by a minor variation known as JN.1. The symptoms include fever, runny nose, sore throat, headaches, and, in some cases, minor gastrointestinal issues. Within

four to five days, he said, the symptoms were getting better[4]. Till date, there were 157 cases of the JN.1 sub-variant nationwide, according to INSACOG, with Kerala accounting for (78), Gujarat (34), Goa (18), Karnataka (8), Maharashtra (7), Rajasthan (5), Tamil Nadu (4), Telangana (2), and Delhi (1) cases. Notably, the JN.1 sub-variant was found in nine states and Union territories. The graph below shows the cases of COVID-19 JN.1 sub-variant cases in India, indicating that the southern states of India have taken the major hit from this variant as compared to the northern states (Figure 1B).

An increase of 702 COVID-19 cases occurred in India on December 28, 2023, raising the overall number of current cases to 4097. Six fatalities were also reported during this time. Since January 2020, India has seen a total of 45 010 944 COVID-19 cases, resulting in 533 346 deaths[5]. Karnataka reported 103 new cases and one fatality on December 27, 2023, increasing the state's total number of cases to 479. Bengaluru contributed 80 of the new cases with eight others coming from Mandya. Among others, there were three from Ballari and Mysuru. In the past 24 hours, 87 individuals have been released from treatment, according to the health department[6]. On December 29, 2023, following an extended period without new infections, Manipur reported a new case of COVID-19. The affected person is a resident of Senapati district's Paomata. He or she took an aircraft from Delhi to Dimapur and then a road trip from Dimapur to Senapati. Since samples have

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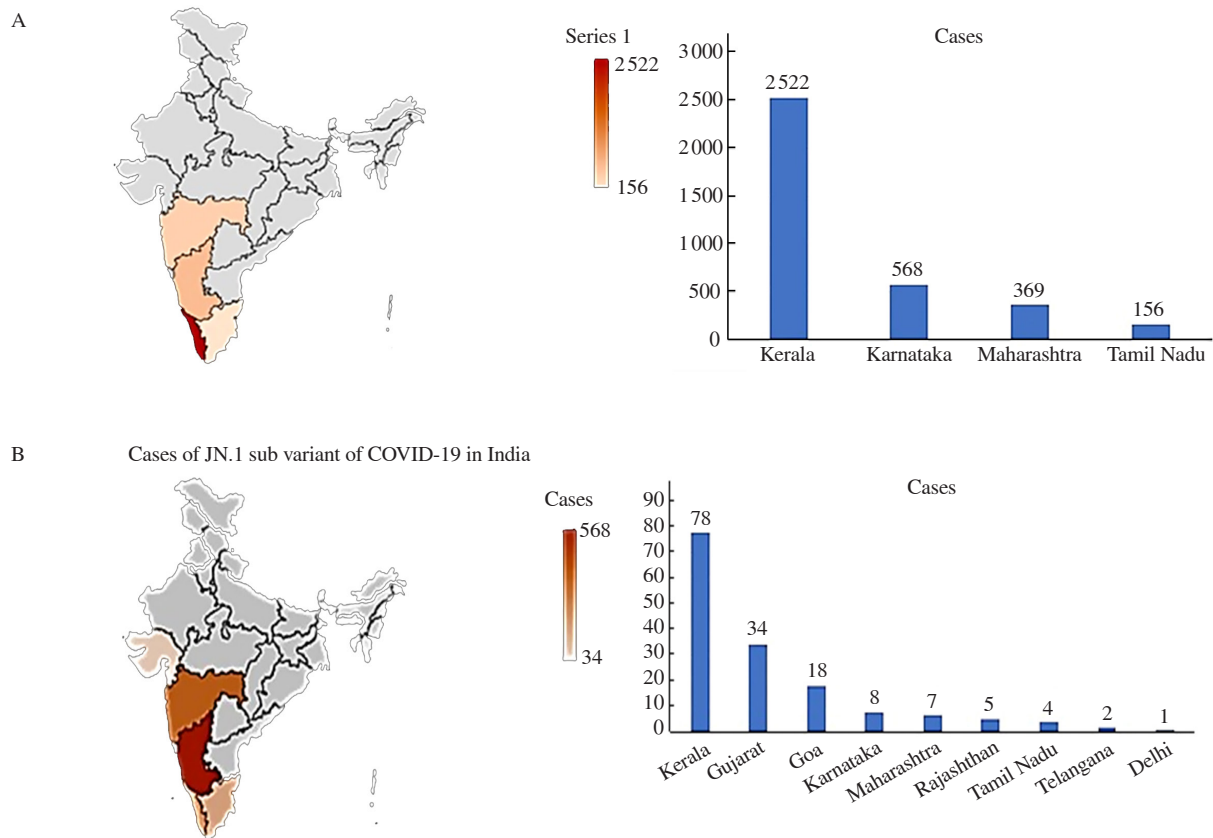


Figure 1. Representation of cases of (A) COVID-19 in 2023[3]; (B) JN. 1 subvariant of COVID-19 in India[5].

been sent for genome sequencing to find out additional information, the precise virus variation is yet unknown. To stop any possible viral spread, authorities are keeping a careful eye on the situation. With the advent of sub-variant JN.1 and multiple states reporting new cases, the rise in COVID-19 cases has raised new concerns for the nation[7]. According to a report in 2021, southern states of India, experienced a relatively higher number of COVID-19 cases due to factors such as its high population density, robust testing and reporting infrastructure, effective contact tracing, international connectivity leading to potential virus introduction, urbanization, well-developed healthcare facilities, and the implementation of public health measures[8]. These factors collectively contributed to a more accurate identification and reporting of cases, along with the state's proactive approach in managing and containing the spread of the virus. So, this can be the reason why the southern state of India are more affected both by COVID-19 and its sub-variant JN. 1 virus as compared to the northern states. There is always a possibility that this new variant could spread to the northern regions of India. Particularly, the southern states have been the epicentres of several viral epidemics, including the JN.1 virus, the tomato virus, and monkey pox. Therefore, steps should be taken to prevent the virus from spreading to other states of India.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

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Authors' contributions

All the authors have equal contribution.

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