

Letter to Editor

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# FLiRTing with danger: The emergence of the KP.2 Omicron variant

Yashu[1], Saumya Shukla[2], Honey Goel[1], Viney Chawla[1], Pooja A Chawla[1]✉

[1]*University Institute of Pharmaceutical Sciences and Research, Baba Farid University of Health Sciences, Faridkot.151203, Punjab, India*

[2]*Medical Administration, Fortis Hospital, Sector 62, SAS Nagar, Punjab 160062, India*

As new COVID-19 strains surface and proliferate over the world, the pandemic is still evolving[1]. The FLiRT variants are one such family of variants that have recently drawn notice. They are a family of Omicron sub-variants quickly becoming dominant. These FLiRT variants include KP.2 and KP.1.1. Due to certain changes in the virus's spike proteins, these variants have been dubbed "FLiRT." The nickname of these variants comes from the initials F and L, R and T, which stand for important mutations that enable them to avoid immunisation[2]. FLiRT variants are spreading more rapidly worldwide in comparison with the other COVID-19 variants. As per available data, the KP.2 sub-variant will become the most prevalent sub-variant of the disease in many developed nations including United States, United Kingdom and South Korea[3]. KP.2 variant entered India in November 2023 and has spread into many states with highest prevalence in Maharashtra. As per the genomic surveillance data compiled by the Indian SARS-CoV-2 genomic Consortium (INSACOG), more than 250 sequences of the sub-variant have been reported in India. As per records in the last 60 days, an approximate of 29% of KP.2 sequences uploaded to Global Initiative on Sharing All Influenza Data (GISAID) have been reported by India[4]. As a result of greater mutations, this variant is considered more infectious in comparison to the previous variants of the disease, increasing the chances of its rapid spread and a surge in number of cases. Additionally, their ability to evade immunity raises the risk of breakthrough infections, which could lead to a rise in hospitalisations and deaths[4].

The FLiRT variants, including KP.2 and KP.1.1, are characterized by symptoms similar to those of earlier COVID-19 variants. These symptoms include cough, fever, fatigue, body aches, headache, loss of taste, sore throat, nausea, and diarrhoea. These symptoms differ slightly from those of other Omicron sub-variants; however, their severity varies according to underlying medical conditions and the individual's current immunological state[5]. Pneumonia, severe respiratory distress, and organ failure are possible outcomes of COVID-19 in extreme cases.

The FLiRT variants are thought to have a higher transmission rate and to be more infectious than earlier Omicron forms[6]. As per the Infectious Disease Society of America, there could be a 1.22-fold increase in the relative effective reproduction number (Re) of KP.2 compared to the JN.1 variant, suggesting a higher rate of transmission for the FLiRT variants. This could be attributed to novel mutations that enhance their spreadability. Droplets can be a source of transmission, which is dangerous for everyone, especially for those with compromised immune systems.

The existing COVID-19 vaccines are found to be less efficient in providing protection against the KP.2 and KP.1.1 as it has increased its virulence through the alterations in the spike proteins[7]. As per research done by experts, vaccination does provide protection against the severity of symptoms, helps in preventing hospitalisation rate and thus reduces the morbidity or deaths caused by COVID-19 but saying so for the newer variant FLiRT is questionable. Vaccination decreases the transmission rate and severity by decreasing the viral load even if it cannot shield the individual from the disease[8]. As per the predictions, it is believed that the FLiRT variant will show resistance towards the vaccinations primarily developed for XB2L.5 strain. To act against the FLiRT variant, a newer/revised vaccination is required with JN.1 lineage as the main target. Vaccination will not protect against the possibility of catching infection but it would

✉To whom correspondence may be addressed. E-mail: pvchawla@gmail.com

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decrease the severity of the symptoms associated. Vaccination for this strain is however still in discussion as the mutation level for FLiRT is high and the possibility exists that it can escape the host's immune defence triggered due to vaccination[9].

Inculcating the preventive measures in our daily life is the best way to decrease the transmission and impact of the FLiRT variant. The hot weather acts as an adjunct in increasing the disease transmission. Measures like vaccination, staying at home if sick, maintaining social distancing at crowded places, wearing mask in public places and maintaining good personal hygiene can help in prevention of the disease[10,11].

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## Authors' contributions

Y and SS conceptualized and designed the work, carried out data collection, drafted the article. HG performed data analysis and interpretation. VC critically reviewed the article. PAC critically reviewed the article, and responsible for final approval of the version to be published.

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