

Molecular surveillance and epidemiology of variants of concern of SARS-CoV-2 during the fifth wave of COVID-19 in Punjab province, Pakistan

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Abstract

The study was designed to determine the prevalence and epidemiology of SARS-CoV-2 variants during the fifth wave of COVID-19 in selected districts of Punjab, Pakistan. The nasal swab samples (n=708) of suspected patients from various districts across Punjab were collected between December 2021 to April 2022. The genome extraction was done using an auto-extractor (Uni-medica) in the BSL-3 facility. Reverse-transcription real-time polymerase chain reaction (RT-PCR) was employed for viral detection and quantification. For the identification of SARS-CoV-2 variants, various mutations of spike protein were targeted using Multiplex PCR. The study's results revealed the Omicron variant of concern (VOC) as the prevalent lineage of SARS-CoV-2 circulating in the selected regions of Punjab at the time of sampling. The VOC accounted for 90.01% of COVID-19 cases, followed by Delta (6.81%) and wild variant (3.80%). Prevalence of Omicron (VOC) was recorded higher in men (47.96%) as compared to women (42.05%). In addition, the highest percentage of VOC was observed in adults (47.39%) as compared to older people (32.07%) and young people (10.55%). This study highlighted the circulation of the Omicron variant during 5th wave of COVID-19 in Punjab Province, Pakistan.

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