Examining mRNA vaccine effectiveness for immunocompromised adults during omicron BA.4 and BA.5 predominance

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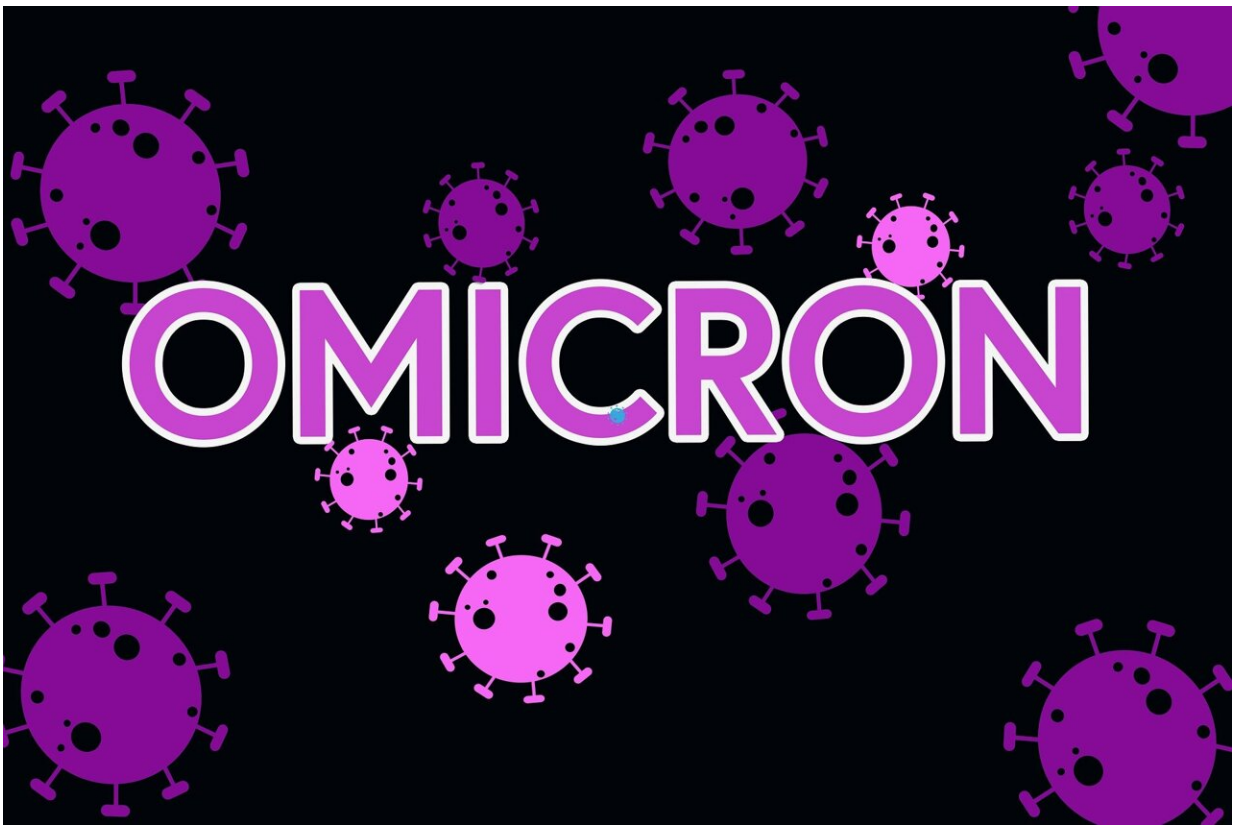

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A new study from the Centers for Disease Control and Prevention's VISION Network presents and analyzes some of the first real-world data

on mRNA COVID vaccine effectiveness during omicron BA.4 and BA.5 predominance for immunocompromised adults.

The large, geographically diverse study confirms that overall protection provided by vaccination—even with one, or later two, boosters—for this population was lower than vaccine effectiveness for adults without immunocompromising conditions. Vaccine effectiveness was lowest among individuals with solid organ or stem cell transplants or hematologic malignancies such as leukemia, lymphoma, or multiple myeloma. BA.4 and BA.5 are the strains that are currently dominant and spreading.

The multistate study includes data from spring and summer 2022 when BA.4 and BA.5 omicron subvariants became dominant and a total of four vaccine doses (two primary and two booster doses) was available to adults with immunocompromising conditions.

The determination of lower vaccine effectiveness among individuals in this high-risk group suggests that non-pharmaceutical interventions, including masks, prophylactic antibody treatment, and anti-viral treatment after acquisition of the virus are important tools to consider for additional protection against severe COVID-19 in immunocompromised adults.

A review of the medical records of 30,000 immunocompromised adults found protection against COVID-19 associated hospitalizations was 34 percent after two vaccine doses, increasing to 71 percent during days 7 to 89 after a third dose, then declining to 41 percent 90 days or more after that dose. Although immunocompromised adults received increased protection after a third dose of the vaccine, this study found that vaccine effectiveness in this population remains lower than in the larger population of all adults.

"This study confirms that even with boosters, immunocompromised adults, because of their weakened immune systems, are still at high risk of moderate to severe COVID. While vaccines in the general adult population have been found to be 70 to 90 percent effective, for the immunocompromised we're looking at a much lower range—34 to 71 percent effective," said study co-author Brian Dixon, Ph.D., MPA, of the Regenstrief Institute and Indiana University Richard M. Fairbanks School of Public Health.

"Those with healthy immune systems should keep in mind that we are a community with a responsibility to keep fellow community members, who are immunocompromised or have other conditions that place them at higher risk for COVID, even with vaccination, protected by taking precautions like hand hygiene and mask wearing, especially when transmission rates are high. We need to look out for one another."

"This higher risk group has been taking precautions and should continue to work with their providers to access needed tools to protect themselves. Immunocompromised individuals should consult their physician with any questions regarding remaining up-to-date with COVID vaccinations to optimize their protection," said Shaun Grannis, M.D., M.S., of the Regenstrief Institute and Indiana University School of Medicine.

"Adults with immunocompromising conditions and other populations have specific questions about the pandemic and vaccine effectiveness. Our findings in this study are a step forward in helping to answer these questions."

The research is published in the CDC's *Morbidity and Mortality Weekly Report*.

More information: Amadea Britton et al, Effectiveness of COVID-19 mRNA Vaccines Against COVID-19–Associated Hospitalizations

Among Immunocompromised Adults During SARS-CoV-2 Omicron Predominance—VISION Network, 10 States, December 2021—August 2022, *MMWR. Morbidity and Mortality Weekly Report* (2022). DOI: 10.15585/mmwr.mm7142a4

Provided by Regenstrief Institute

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