

# Some antivirals used in nonsevere COVID-19 may reduce hospitalizations and deaths

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A colored scanning electron micrograph of the SARS-CoV-2 virus. Credit: NIAID

The antiviral drugs molnupiravir and nirmatrelvir–ritonavir (Paxlovid), when used to treat nonsevere COVID-19, most likely reduce the risk of subsequent progression to hospitalization and death, according to new

research published in *CMAJ (Canadian Medical Association Journal)*.

As most trials have focused on patients with severe or critical COVID-19, researchers conducted a [systematic review](#) and meta-analysis to understand the effectiveness of these drugs in treating nonsevere COVID-19.

"Because [antiviral drugs](#) may be most useful in nonsevere disease, this review addresses an important gap in evidence," says Dr. Tyler Pitre, Division of Internal Medicine, McMaster University, Hamilton, Ontario, with coauthors.

The researchers identified 41 trials involving 18 568 patients with nonsevere COVID-19, most of whom were aged 36.5 to 65.5 years. Compared with [standard care](#) or placebo, nirmatrelvir–ritonavir likely reduced the risk of hospital admission (46.2 fewer admissions per 1000), and molnupiravir probably reduced the risk (16.3 fewer admissions per 1000).

These findings have implications for health care systems and clinical guidelines.

"Our findings suggest that nirmatrelvir–ritonavir may be superior to molnupiravir for some outcomes, which has implications for organizations, such as the [World Health Organization] WHO, that are in the process of developing recommendations addressing molnupiravir and nirmatrelvir–ritonavir," write the authors. "Health care systems deciding on drug procurement and cost issues need to consider the relative efficacy of nirmatrelvir–ritonavir over molnupiravir."

In a related commentary, authors point out challenges in applying these findings to current patients with COVID-19. Several of the trials on which the study is based were conducted among unvaccinated patients

who had been infected with the Delta variant. As a significant portion of Canada's population is now vaccinated and many have been infected with the Omicron variant, the medications may be less effective in a real-world setting.

The commentary authors call for national and international approaches to rapidly generate evidence in a changing disease landscape.

"As the virus and [population dynamics](#) evolve, ongoing research is required to inform clinical and policy decisions," write Drs. Corinne Hohl, University of British Columbia and Vancouver Coastal Health Research Institute, Vancouver, BC, and Andrew McRae, University of Calgary, Calgary, Alberta. "Adaptive platform trials and large observational studies offer the best opportunities to generate timely evidence on the effectiveness of COVID-19 therapeutics."

The authors conclude, "These studies can be completed in Canada, but need to be supported by Canadian research funders, [health](#) care institutions, data custodians, [health care providers](#) and patients."

**More information:** Antiviral drug treatment for nonsevere COVID-19: a systematic review and network meta-analysis, *Canadian Medical Association Journal* (2022). [DOI: 10.1503/cmaj.220471](https://doi.org/10.1503/cmaj.220471)

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