

COVID-19 and Rhinovirus Infections Prevented by Azelastine Nasal Spray

Variants of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for the [coronavirus disease 2019](#) (COVID-19) pandemic, continue to emerge almost six years after its initial emergence.



Study

The current study was a single-center, phase II randomized controlled trial comparing the use of azelastine [nasal spray](#) with placebo in 450 individuals. The mean age of the study participants was 33 years, most of whom were female and White.

Women of reproductive age were included only if they were neither pregnant nor breastfeeding and/or were using reliable contraception. A significant majority of study participants received one or more [COVID-19 vaccinations](#), with the cohort receiving a median of three shots. In most cases, the most recent COVID-19 vaccine was administered two years before the current study began.

Study participants were randomly assigned to receive 0.1% azelastine or placebo nasal spray three times every day for a total of eight weeks. Notably, this dose of azelastine exceeds the twice daily use that is typically prescribed to manage moderate to severe [allergic rhinitis](#).

Study participants were tested for SARS-CoV-2 infection by rapid antigen tests (RAT) twice weekly throughout the study period, and any positive test result was subsequently confirmed by [polymerase chain reaction](#) (PCR). Study participants who experienced respiratory symptoms but tested negative by RAT also underwent a PCR test for SARS-CoV-2 and other respiratory viruses.

Results

The azelastine group was less likely to be diagnosed with SARS-CoV-2 [infection](#) than controls at 2% and 6.7%, respectively. This observation indicates that azelastine reduces the risk of SARS-CoV-2 infection by about 70%.

[Azelastine treatment](#) also delayed the time to infection by 12 days as compared to the placebo group. Symptomatic COVID-19 infections were less likely in the azelastine group, with azelastine recipients remaining positive for SARS-CoV-2 for 1.7 days less than the control group, as assessed by self-reported RAT.

Aside from COVID-19, rhinovirus infections were the most common infection reported among study participants. Azelastine treatment was similarly found to reduce the risk of [rhinovirus](#) infections, with 2% of recipients infected as compared to 6% in the placebo group.

Overall, [respiratory infections](#), as detected by PCR, affected 9% of the azelastine group as compared to 22% of controls. Participants who had antibodies indicating prior SARS-CoV-2 infection showed somewhat lower odds of testing positive again, suggesting that baseline immune status modestly influenced infection risk.

Importantly, adverse events were similar in overall frequency between groups but more commonly considered treatment-related in the azelastine group. However, most of these reactions were minor and well-known side effects like bitter taste, [nosebleeds](#), and fatigue.

Conclusion

The overall rate of new viral infections was low, thus indicating that azelastine may have broad antiviral activity. In particular, azelastine conferred [protection](#) against symptomatic rhinovirus infection, which may arise due to inhibition of the rhinovirus receptor ICAM-1. The authors noted that this is one of the first clinical trials to show reduced rhinovirus infection rates following a single therapy.

Azelastine is a safe, easily available, and convenient approach for [pre-exposure prophylaxis](#) of SARS-CoV-2 infection, which can be easily used in high-risk settings like public meetings or during travel. Nevertheless, the researchers cautioned that the study's single-center design, modest sample size, and potential unblinding due to azelastine's bitter taste limit generalizability. They also acknowledged that the placebo formulation itself could have had mild protective effects by stabilizing the nasal barrier.

The study was funded by Ursapharm Arzneimittel GmbH, the manufacturer of azelastine nasal spray, and conducted in collaboration with Saarland University researchers. Despite these promising findings, larger trials must be conducted to validate these observations and explore the potential utility of azelastine for other [respiratory viruses](#).

Source:

<https://www.news-medical.net/news/20251006/Azelastine-nasal-spray-prevents-COVID-19-and-rhinovirus-infections.aspx>