COVID antiviral drug molnupiravir eliminates actively infectious SARS-CoV-2 virus by day 3 of therapy

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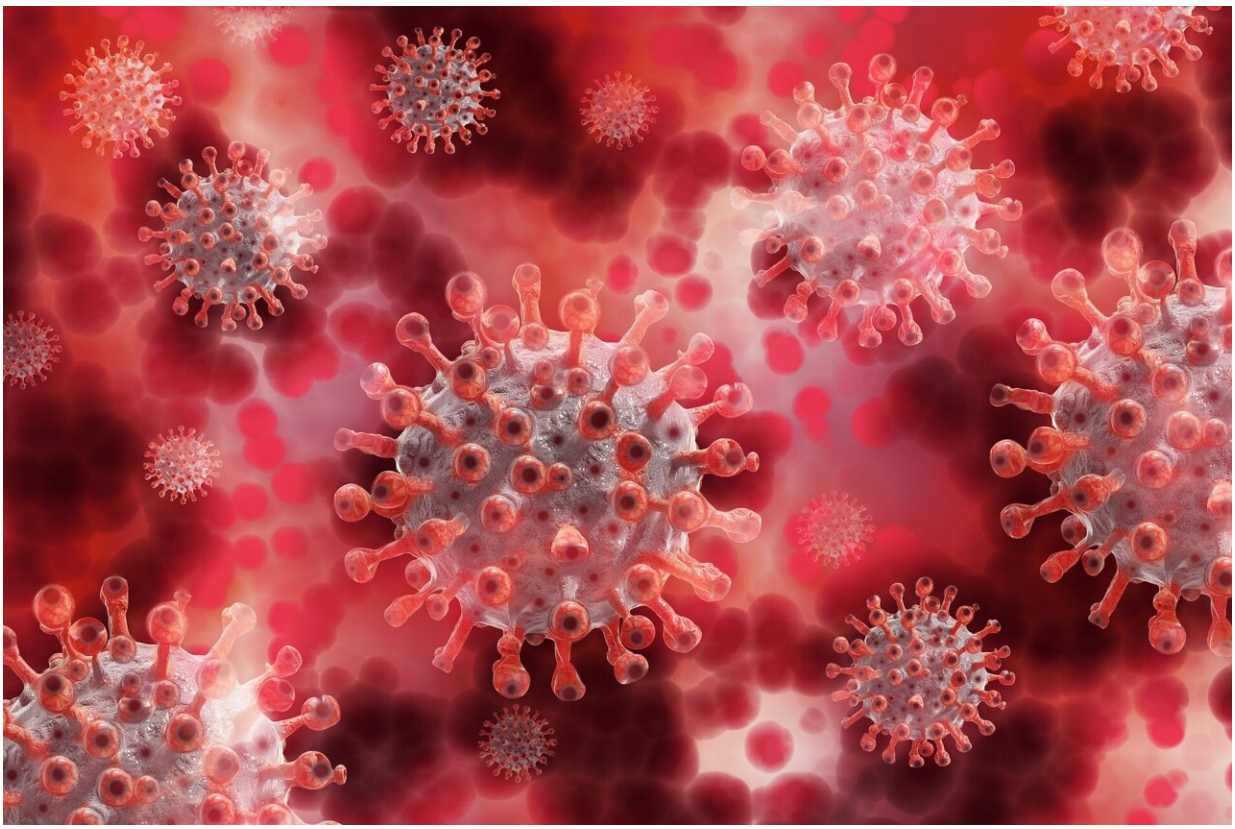

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New data to be presented at this year's European Congress of Clinical Microbiology & Infectious Diseases (ECCMID 2022, Lisbon, 23-26

April) shows that participants taking the new anti-COVID drug molnupiravir eliminate actively infectious SARS-CoV-2 virus by day three of starting therapy, while many participants who received placebo took up to five days and in some cases longer to achieve this. The study is by Dr. Julie Strizki and colleagues of the pharmaceutical company MSD, a trade name of Merck & Co., Inc, Kenilworth, NJ, U.S., who manufacture molnupiravir (brand name Lagevrio).

Molnupiravir is an oral antiviral prodrug with broad activity against coronaviruses, including SARS-CoV-2 and its variants of concern. The randomized, placebo-controlled, double-blind phase 2/3 MOVe-OUT trial (already published in *NEJM*, see link below) confirmed superiority of molnupiravir over placebo in non-hospitalized adults with mild/moderate COVID-19 at risk of progression to severe disease, provided they started therapy within five days of symptom onset. The drug has been granted an emergency use authorisation by the by the US Food and Drug Administration (FDA) and is also authorized for use in the UK, Australia, and Japan and 12 other jurisdictions.

PCR testing was used to determine SARS-CoV-2 RNA viral loads from nasopharyngeal swabs collected on days one (baseline), three, five (end-of-treatment visit), 10, 15, and 29. This new study reports the final analyses of virologic outcomes from this trial. The analysis includes participants with infectious virus isolated at baseline and who had a post-baseline SARS-CoV-2 RNA sample available (n=92 molnupiravir, n=96 placebo).

Results demonstrated that on day three of treatment, infectious SARS-CoV-2 was detected in zero of 92 of participants with infectious virus at baseline who received molnupiravir, compared with 21.8% (20/96) of participants who received placebo. At Day 5, virus was detected in 0.0% (n=0/91) in the molnupiravir arm compared with 2.2% (n=2/89) in the placebo arm. At Day 10, no virus was detected in either arm for patients

with infectious virus at baseline.

Dr. Strizki concludes that "this analysis of the final virologic outcome data from MOVe-OUT confirms previous observations demonstrating that a 5-day treatment course of twice-daily 800 mg molnupiravir results in a more rapid decline in viral RNA and faster elimination of infectious virus than placebo. This study provides additional evidence that molnupiravir helps those infected clear SARS-CoV-2 faster than placebo, and supports MOVe-OUT's primary finding that molnupiravir can lower the risk of progression to serious illness in this high-risk cohort."

Molnupiravir is now in the process of being submitted to global regulatory authorities for emergency use authorization or approval in other countries and jurisdictions, such as the European Medicines Agency (EMA) and is being studied in a Phase three trial, MOVe-AHEAD, to evaluate it in a prophylaxis setting.

More information: Molnupiravir for COVID-19 in Nonhospitalized Patients, *New England Journal of Medicine* (2022). DOI: 10.1056/NEJMc2201612

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