Lopinavir/ritonavir and Arbidol not effective for mild-to-moderate COVID-19 in adults

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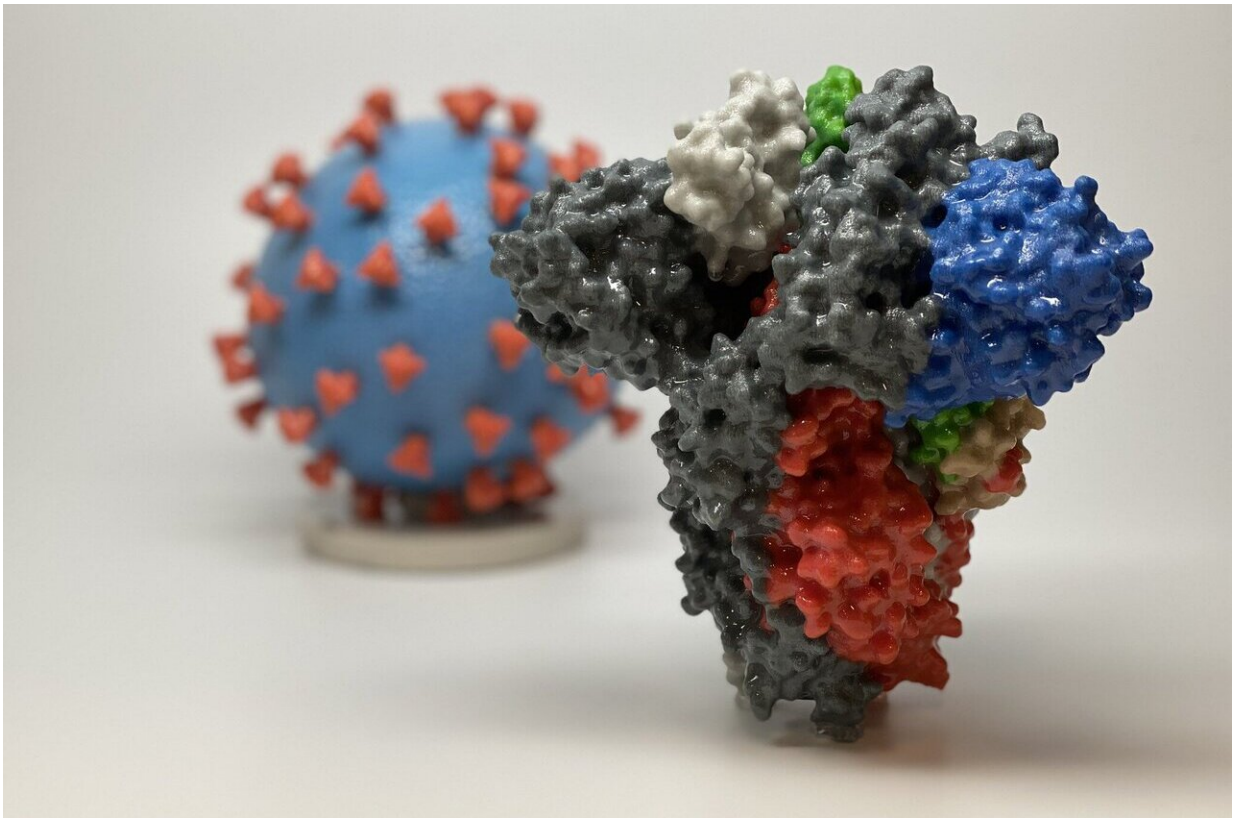

3D print of a spike protein of SARS-CoV-2, the virus that causes COVID-19—in front of a 3D print of a SARS-CoV-2 virus particle. The spike protein (foreground) enables the virus to enter and infect human cells. On the virus model, the virus surface (blue) is covered with spike proteins (red) that enable the virus to enter and infect human cells. Credit: NIH

An exploratory randomized, controlled study on the safety and efficacy of either lopinavir/ritonavir (LPV/r) or Arbidol—antivirals that are used in some countries against HIV-1 and to treat influenza , respectively—as treatments for COVID-19, the disease caused by the novel coronavirus SARS-CoV-2, suggests that neither drug improves the clinical outcome of patients hospitalized with mild-to-moderate cases of the disease over supportive care. The findings appeared April 17 in *Med*, a new medical journal published by Cell Press.

"We found that neither lopinavir/ritonavir nor Arbidol could benefit clinical outcomes for patients and that they might bring some side effects," says co-senior author Linghua Li, Vice Director of the Centre for Infectious Diseases of Guangzhou Eighth People's Hospital in Guangzhou, China. "And although the sample size is small, we believe it could still provide meaningful suggestions for proper application of LPV/r or Arbidol for COVID-19."

The researchers chose to study LPV/r and Arbidol because the antivirals had been selected as candidates for treating COVID-19 in a guidance issued on February 19, 2020, by the National Health Commission of China, based on in vitro cell tests and previous clinical data from SARS and MERS. Other researchers had already found that LPV/r did not improve outcomes for patients with severe COVID-19. "It is important to know if lopinavir/ritonavir is effective for mild/moderate cases with COVID-19," Li says. "If it is, the medicine could prevent mild/moderate cases from deteriorating to severe status and help reduce the mortality rate."

The study assessed 86 patients with mild-to-moderate COVID-19, with 34 randomly assigned to receive LPV/r, 35 to Arbidol, and 17 with no antiviral medication as a control. All three groups showed similar outcomes at 7 and 14 days, with no differences between groups in the rates of fever reduction, cough alleviation, or improvement of chest CT

scan. Patients in both drug groups experienced adverse events such as diarrhea, nausea, and loss of appetite during the follow-up period, while no apparent adverse event occurred in the control group.

"Our findings suggest that we need to cautiously consider before using these drugs," Li says. "Researchers need to keep working to find a really effective antiviral regimen against COVID-19, but meanwhile, any conclusions about antiviral regimens need strict and scientific clinical trials and appropriate caution. The general public, however, shouldn't panic just because currently there's no specific antiviral medicine currently. Quarantine and good personal health protection could help us prevent people from getting infected with COVID-19, and even in case of infection, the present comprehensive treatment can still enable the vast majority of patients to return to health."

More information: Med, Li, Xie, Lin and Cai et al.: "Efficacy and safety of lopinavir/ritonavir or arbidol in adult patients with mild/moderate COVID-19: an exploratory randomized controlled trial", DOI: 10.1016/j.medj.2020.04.001

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