

Antivirals and COVID-19: the evidence to date

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Globally there is huge interest in the potential role of antiviral agents in the management of COVID-19. A number of antivirals have shown in vitro activity against SARS-CoV-2 and many clinical trials are underway internationally (with some in Australia). However, to date there is very little clinical data to guide antiviral therapy. **At this stage antiviral therapy for COVID-19 is considered experimental.**¹

Lopinavir-ritonavir is an antiviral available in Australia which is a combination of two protease inhibitors indicated for HIV infection.

- An open label randomised controlled trial from China investigated lopinavir 400 mg/ritonavir 100 mg twice a day for 14 days in 199 patients hospitalised with confirmed SARS-CoV-2 with severe pneumonia and oxygen saturation of $\leq 94\%$ breathing ambient room air.¹
 - There was no difference between the treatment and control groups in
 - time to clinical improvement, 28 day mortality and intensive care unit length of stay; however the trial likely lacked sufficient power to detect significant differences
 - gastrointestinal adverse effects were common with lopinavir/ritonavir and 13 of 99 treated patients stopped treatment early due to adverse effects.
- A number of international trials include lopinavir-ritonavir (in combination with another antiviral or hydroxychloroquine) in the treatment protocol for severe COVID-19.
- It is anticipated that the use of lopinavir-ritonavir in Australia for COVID-19 will be in the setting of clinical trials, with two trials due to commence by the end of March 2020.

There is no data to support the use of baloxavir and oseltamivir (anti-influenza agents) in the treatment of COVID-19. They may have a role if there is confirmed co-infection with influenza.

Reference

1. NSW Health Interim Guidance on use of antiviral therapy in COVID-19.
<https://www.health.nsw.gov.au/Infectious/diseases/Pages/covid-19-antiviral-therapy-interim-guidance.aspx>.
Accessed 24 March 2020.
2. Cao B, Wang Y, Wen D et al. A trial of lopinavir-ritonavir in adults hospitalised with severe COVID-19. NEJM March 18 2020. DOI: 10.1056/NEJMoa2001282

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