London

Cite this as: *BMJ* 2020;370:m2650
http://dx.doi.org/10.1136/bmj.m2650
Published: 01 July 2020

Covid-19: Lopinavir-ritonavir does not benefit hospitalised patients, UK trial finds

Shaun Griffin

The anti-HIV drug lopinavir-ritonavir does not improve survival of patients with covid-19 in hospital, according to new findings from the UK RECOVERY trial.

Announcing the results, which are yet to be formally peer reviewed, Martin Landray, deputy chief investigator, said that current guidelines in many countries recommend lopinavir-ritonavir as a treatment for covid-19. "The results from this trial [and] other large randomised trials should inform revisions to those guidelines and changes to the way individual patients are treated," he said.

The data showed that, at 28 days, the death rate was not significantly different in patients randomly allocated to receive lopinavir-ritonavir compared with those randomly allocated to usual hospital care only (22.1% versus 21.3% (95% confidence interval 0.98 to 1.26); P=0.10). There was also no evidence of beneficial effects on risk of progression to mechanical ventilation or length of hospital stay.

Due to difficulties administering lopinavir-ritonavir to people on artificial ventilation, however, comparatively few of the patients with most severe covid-19 were included in the study, noted Stephen Griffin, associate professor at the University of Leeds School of Medicine. "Thus, while it is not formally possible to say whether this group of patients might have benefitted from treatment, this seems unlikely as direct acting antiviral drugs are usually more effective when used earlier during the disease course . . . As [lopinavir-ritonavir] neither improved survival nor progression to the more severe disease stages across all [trial] subgroups, the likelihood of these drugs being useful in the treatment of SARS-CoV2 infection seems negligible," he said.

On the impact of the RECOVERY trial so far, its chief investigator Peter Horby said that global practice had changed three times in 100 days as a result of the study. "This extraordinary national effort has shown that two drugs used to treat hospitalised covid patients throughout the world, hydroxychloroquine and lopinavir-ritonavir, do not improve survival, while one drug that was not recommended, dexamethasone, saves lives."[1 2]

Low dose dexamethasone was recently shown by the RECOVERY team to reduce the risk of death by about one third among patients receiving ventilation and by one fifth in those requiring oxygen alone. There was no benefit among patients not requiring respiratory support.

The RECOVERY trial, which began in March, continues to recruit patients with covid-19 in hospital to study the effect of three further interventions—azithromycin, the anti-inflammatory tocilizumab, and convalescent plasma. More than 11 800 patients have been randomly allocated to these or the previous treatment arms. These new data now allow trials to focus on other potential treatment options.

1 Torjesen I. Covid-19: Hydroxychloroquine does not benefit hospitalised patients, UK trial finds. *BMJ* 2020;369:m2263. doi: 10.1136/bmj.m2263 pmid: 32513810
2 Mahase E. Covid-19: Low dose steroid cuts death in ventilated patients by one third, trial finds. *BMJ* 2020;369:m2422. . doi: 10.1136/bmj.m2422 pmid: 32546467