

# Tocilizumab reduces deaths in patients hospitalized with COVID-19

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An anti-inflammatory treatment routinely used to treat rheumatoid arthritis has been found to reduce death risk in hospitalized patients with COVID-19.

A nationwide study involving the University of Exeter and the Royal Devon & Exeter NHS Trust, also found that [tocilizumab](#) shortens the time until patients are successfully discharged from hospital and reduces the need for a mechanical ventilator.

The result is the second success for the RECOVERY trial which involves 177 NHS hospitals, coordinated nationally by Oxford University and delivered by the National Institute for Health Research Clinical Research Network. The randomized clinical trial is testing a range of potential treatments that are already in use for other purposes, because of early evidence that they could benefit patients with COVID-19.

Previously, the trial found that the cheap and readily available steroid dexamethasone reduced the risk of dying in patients admitted to hospital with the virus, leading to its widespread use in [clinical care](#) across the world.

The intravenous drug tocilizumab was added to the trial in April 2020 for patients with COVID-19 who required oxygen and had evidence of inflammation.

A total of 2,022 patients were randomly allocated to receive tocilizumab by intravenous infusion and were compared with 2,094 patients randomly allocated to usual care alone. Eighty two percent of patients were taking a systemic steroid such as dexamethasone.

Treatment with tocilizumab significantly reduced deaths: 596 (29 percent) of the patients in the tocilizumab group died within 28 days compared with 694 (33 percent) of patients in the usual care group, an absolute difference of 4 percent. This means that for every 25 patients treated with tocilizumab, one additional life would be saved. Tocilizumab also increased the probability of discharge alive within 28

days from 47 percent to 54 percent. These benefits were seen in all patient subgroups, including those requiring oxygen via a simple face mask through to those requiring mechanical ventilators in an intensive care unit.

Dr. Ray Sheridan, associate clinical professor at the University of Exeter Medical School, is part of the trial at the Royal Devon & Exeter Hospital. He explained that tocilizumab works by reducing the inflammation in the lungs that causes the main symptoms of cough and shortness of breath and low oxygen levels. He said: "This trial is a fantastic success story. It's remarkable that that this drug works on top of the already proven benefit of dexamethasone, so as a doctor working on a front-line COVID ward, I can combine them and get even more benefit. I now have an extra treatment to offer to the sicker COVID-19 patient who needs oxygen and has inflammation in their lungs. I can offer this to patients knowing there is good evidence that it saves lives, shortens length of stay and reduces the need to move from a medical ward to the ITU ,so less people will need to go onto a ventilator.

"Thanks to UK Universities, National Institute for Health Research staff, NHS doctors nurses and pharmacy staff, and most of all to the many thousands of patients who volunteered and participated, we now have another very effective treatment in the fight against COVID-19 that can now be part of routine care today both in the UK and other countries."

Professor Michael Gibbons, clinical director for the Clinical Research Network South West Peninsula, said: Professor Michael Gibbons, Clinical Director for the Clinical Research Network South West Peninsula (CRN SWP), said: "The recent results from the RECOVERY trial add significant and important information to our knowledge on how best to treat COVID-19. Every single acute hospital in Devon, Cornwall and Somerset is running this study, supported through the CRN. Through the study many of our local patients have had access to tocilizumab and

other treatments. The data has now demonstrated the benefit of tocilizumab in improving survival and reducing length of stay for patients with COVID-19 pneumonia and significant inflammation. This is yet another milestone in the ongoing treatment of COVID-19 and our patients have benefitted hugely from these research opportunities. I want to thank all the organizations and staff who worked tirelessly to support the trial."

Peter Horby, professor of emerging infectious diseases in the Nuffield Department of Medicine, University of Oxford, and Joint Chief Investigator for RECOVERY, said "Previous [trials](#) of tocilizumab had shown mixed results, and it was unclear which patients might benefit from the treatment. We now know that the benefits of tocilizumab extend to all COVID patients with low oxygen levels and significant inflammation. The double impact of dexamethasone plus tocilizumab is impressive and very welcome."

Martin Landray, professor of medicine and epidemiology at the Nuffield Department of Population Health, University of Oxford, and Joint Chief Investigator, said "The results from the RECOVERY trial clearly show the benefits of tocilizumab and dexamethasone in tackling the worst consequences of COVID-19—improving survival, shortening hospital stay, and reducing the need for mechanical ventilators. Used in combination, the impact is substantial. This is good news for patients and good news for the health services that care for them in the UK and around the world. We simply would not know this if it wasn't for the incredible support of NHS [patients](#) and staff in the most challenging of circumstances."

Provided by University of Exeter

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