

Repurposing drugs

Another life-saving treatment is found for covid-19

Two drugs for arthritis prove strikingly effective

The Economist Jan 7th 2021

GOOD NEWS from covid-19 wards is hard to come by these days. A relentless surge in infections is overwhelming hospitals around the world. But the results from clinical trials of two drugs announced today just improved the prognosis, for both patients and hospitals.

The two drugs, called tocilizumab and sarilumab, are currently used to reduce inflammation in patients with arthritis. Hyper-inflammation, whereby the immune system goes into overdrive and destroys the organs, is how covid-19 tends to kill. The search for suitable anti-inflammatory drugs for covid-19 has already turned up one, dexamethasone. It is a cheap steroid that dampens the immune system across the board. In contrast, tocilizumab and sarilumab are more targeted. They are both made of antibodies that block the effect of interleukin-6, a protein that stokes the immune response and has been prominent in patients with covid-19.

The clinical trial of tocilizumab and sarilumab enrolled 800 patients hospitalised for covid-19 who were ill enough to require transfer to intensive-care units (ICUs). The trial was conducted in six countries, with most of the participants in Britain. (It has an efficient programme of covid-19 drug trials, in which a quarter of hospitalised patients are enrolled). Half of the 800 patients received one of the two drugs on top of the standard treatment, and the other half received only the standard treatment (including dexamethasone).

Nearly 36% of patients in the standard-treatment group died, compared with 27% of patients in the group that also received tocilizumab or sarilumab. In other words, it cut the death rate by about a quarter. Moreover, the patients treated with these drugs recovered faster and were discharged from hospital seven to ten days earlier. The reduction in hospital stay would free up lots of ICU beds—welcome news in places like Britain and America, where lots of hospitals are running out of beds.

The two drugs appear to work equally well, though the results are more certain for tocilizumab which is an older, more widely available drug and was, therefore, given to the vast majority of participants in the new-treatment arm of the trial.

The drugs are not cheap, and so may be beyond the means of developing countries. In Britain a course of intravenous treatment costs £750-1,000 (about \$1,000-1,400). The shorter ICU stay more than offsets this amount; a day at the ICU costs the country's

National Health Service (NHS) around £2,000 per patient. And, in general, patients who spend fewer days in intensive care recover faster afterwards and need less rehabilitation.

The NHS will start using tocilizumab immediately for covid-19 patients at ICUs. Hospitals already have supplies of the drug and the government is working with Roche, a drug manufacturer that makes it, to increase supplies. For now, Britain has banned exports of both tocilizumab and sarilumab. As covid-19 deaths continue, the trial results bring a ray of hope for patients, exhausted health workers and the millions of people under lockdown.