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## **BRIEF19**

*A daily review of covid-19 research and policy*

### **BREAKING RESEARCH BRIEFING**

#### **Another hope dashed? Tocilizumab not as promising as hoped in a new trial.**

Earlier this week we [covered](#) three *JAMA Internal Medicine* papers assessing drug called tocilizumab, a monoclonal antibody that targets interleukin-6 receptors, thought to contribute to the human body's counterproductive immune response to SARS-CoV-2, the virus that causes covid-19. The studies from earlier this week were disappointing overall but left us with a glimmer of hope that the medication might still benefit a subset of patients.

The idea is that this medication reduces the inflammatory response seen in critically ill patients with covid-19. Released today in [New England Journal of Medicine](#) is an industry funded study looking at this drug's efficacy. Sadly these results are also not promising. Researchers at Massachusetts General Hospital studied whether drug administration affected the need for mechanical ventilation or death, prior to intubation. This well performed double-blind placebo-controlled study required patients to have confirmed SARS-CoV-2 and at least two of the following clinical features: fever, abnormal lung findings on radiological imaging (such as chest x-rays or CT scan), or the need for supplemental oxygen.

A total of 243 patients (58 percent of whom were men) were enrolled who had a median age of 59.8 years. Tocilizumab was found to have a hazard ratio of 0.83 for intubation or death, but the ratio crossed the 1.0 threshold (less than 1.0 would indicate fewer deaths, more than 1.0 would indicate more deaths), meaning that it cannot be said to be a statistically meaningful result (the authors are 95 percent certain that the "true" ratio is somewhere between 0.38 and 1.81). At two weeks, 18 percent of the patients who received the monoclonal antibody drug had disease worsening compared to 15 percent among those who received placebo. The discontinuation of supplemental oxygen was very similar in both groups as well (5.0 days vs 4.9 days).

Of note, a reasonable portion of the patient group studied was Hispanic or Latino (45 percent) which does tend to reflect previous studies looking at patient demographics hospitalized with severe or critical cases of covid-19.

Unfortunately the use of the monoclonal antibody, tocilizumab was not found to prevent death or intubation in patients with covid-19. Given the very large confidence intervals it was hard for the authors to draw a conclusion as to whether this medication is harmful or helpful to patients with respect to a number of different clinical outcomes.

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*Brief19 is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health and public policy.*