

The Use of Low Dose Tocilizumab in Severe SARS-CoV-2 in a Minority Population in NJ

Michelle Cholankeril MD¹, Keia Smith², Rassam Khan MD¹, Sarah Ayad MD¹

¹Trinitas Regional Medical Center, 225 Williamson St, Elizabeth, NJ, 07207, USA; ²Kean University, 1000 Morris Ave, Union, NJ, 07083, USA

Background: SARS-CoV-2 has caused a worldwide pandemic; as of March 2022, it has affected over 78.8 million individuals with over 958,609 deaths in the United States. The coronaviruses infect monocytes, dendritic cells, and T cells which activate and secrete IL-6. High circulating concentrations of IL-6 bind to the soluble form of IL-6R complex that activates endothelial cells and sets off a “cytokine storm”. Severe cases of cytokine release can cause multi-organ failure with life-threatening complications. We aim to examine the use of the IL-6 inhibitor, tocilizumab, at a dose of 200 mg or less in a single, community-based institution.

Methods: We performed a retrospective analysis on 55 patients with confirmed COVID-19 virus between March-July 2020. Tocilizumab was given to patients that had hypoxemia, lung infiltrates on chest radiography, and elevated biomarkers. We assessed all patients for inflammatory markers such as CRP, fibrinogen, d-dimer, and ferritin. We analyzed IL-6 levels in all patients. Following the administration of medication, we repeated inflammatory markers to evaluate for measurable change. Descriptive analysis was performed on all patients receiving tocilizumab using SigmaPlot/SyStat Software.

Results: In total, 73% (40) were Hispanic, 18% (10) African American, and 9% (5) were Caucasian, 28.5% had cardiopulmonary disease, 23% had diabetes and 50% had no underlying comorbidities. Our analysis showed that 20 patients had undergone endotracheal intubation and 35 had received NINV as their highest level of respiratory support needed during hospitalization. Of the 54 patients who had received low dose tocilizumab, 61.1% (33) had improved respiratory status and 38.8% (21) had worsened or died. We saw a statistically significant vast improvement in CRP levels and ferritin levels post-Tocilizumab.

Conclusion: Our results show that low dose tocilizumab has a drastic improvement in respiratory distress in our minority population. This allowed our patients to be safely weaned off ventilatory support.