

# Tocilizumab Magic in Octogenarian Patient of COVID-19 ARDS

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More than 85% of SARS-CoV-2-infected patients who develop coronavirus disease 2019 (COVID-19) apparently have mild symptoms, about 14% of patients develop severe symptoms, and 5% contract critical disease defined by respiratory failure, shock, and/or multiorgan failure.<sup>1</sup> Tocilizumab is an IL-6 antagonist, the use of which has been extrapolated from other cytokine release syndromes. Its use in COVID-19 has been beneficial in certain observational studies.<sup>2</sup> In India, as per the Ministry of Health and Family Welfare, DGHS Government of India guidelines version 5, its off-label use has been recommended in moderate to severe COVID-19 patients not improving on steroids.

We report a case of an 85-year-old man with no prior comorbidities presented with complaints of fever associated with shortness of breath for the last 5 days. On examination, he was conscious, oriented, with a respiratory rate of 26 per minute and use of accessory muscles of respiration. His oxygen saturation was 90% on room air and improved to 96% on a non-rebreather mask with O<sub>2</sub> flow at 10 L/minute. He was tested positive for COVID-19 RT-PCR before admission and was being treated with steroids without any improvement. Other investigations revealed a hemoglobin level of 11.5 g/dL, TLC of 12,100 with differential counts suggestive of 90% neutrophils, 5% lymphocytes, 2% eosinophils with NLR of 18, and liver and renal functions were normal. Arterial blood gas analysis was suggestive of pH 7.4, pO<sub>2</sub> of 70.4, pCO<sub>2</sub>-34.6, HCO<sub>3</sub>-21.6, and SpO<sub>2</sub> of 90%. His serum procalcitonin levels were 0.1 ng/mL.

Inflammatory markers was suggestive of cytokine release syndrome (CRS); CRP -363 ( $N < 1$  mg/dL), ferritin-207 ng/mL (N30-400), IL-6-56.06 ( $N < 7$  pg/mL), ESR-82 mm/hour, D-dimer 555 (<500), and fibrinogen-11.67 (350 mg/dL). CT scan thorax was suggestive of COVID pneumonia with a CT severity index of 16/25 which comes under the severe category. The patient has been treated with Inj. dexamethasone 6 mg, Inj. low mol wt heparin, Inj. azithromycin. As this patient has IL-6 levels >5 times elevated and was refractory to steroids, Inj. tocilizumab 4 mg/kg was given in infusion dissolved in 100 mL of normal saline slowly over 2 hours to this patient in concordance to the study done by Tleyjeh et al.<sup>3</sup>

The patient's condition gradually started improving and his oxygen requirement also begin to decline in the next 3-4 days, similar to study done by Salvati et al.<sup>4</sup> He remained hospitalized for 10 days and then discharged after he was able to maintain his

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oxygen saturation on room air along with radiological improvement on chest X-ray.

The patient was followed up after 6 weeks after an illness in the outpatient department, 6-minute walk test with SpO<sub>2</sub> monitoring with pulse oximeter was done pre- and post-walk. There was no drop in oxygen saturation. Intensive spirometry was done, which was within normal limits.

To conclude, tocilizumab can be used as an off-label drug in moderate to severe COVID ARDS patients who are refractory to steroid therapy and IL-6 levels are elevated >5 times of normal limit after ruling out bacterial infections.

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