



Tocilizumab – A Treatment Option for Torsades de Pointes in COVID-19 patient

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BACKGROUND

The incidence of ventricular arrhythmias (VA) in Coronavirus disease 2019 (COVID-19) patients has ranged from 1.6 to 5.9%. Although COVID-19 generally manifests as a respiratory illness, it can also trigger a systemic inflammatory response which in turn may unmask arrhythmias. Here we discuss a challenging case of COVID-19 that manifested as Torsades de Pointes (TdP).

CASE

A 39-year-old female with no known past medical history presented with complaints of multiple syncopal episodes in the last two days. Initial electrocardiograms (EKG) showed frequent premature ventricular contractions (PVCs) and a prolonged corrected QT (QTc) interval of 520ms. On telemetry frequent PVCs soon converted to TdP with loss of consciousness managed with successful direct current cardioversion (DCCV). However, the patient relapsed into TdP warranting another successful DCCV. COVID-19 workup came back positive. Electrolytes were within normal limits; however, C-reactive protein (CRP) and troponin T were found to be elevated.

Tocilizumab can cause QT interval shortening in association with a reduction in CRP and cytokine levels and may be beneficial for use in COVID-19 patients with QT prolongation and VA including TdP

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DISCUSSION-MAKING

The patient was started on intravenous (IV) magnesium for 24 hours. Following another episode of self-limiting TdP isoproterenol infusion was given briefly along with tocilizumab. An echocardiogram showed no evidence of structural heart disease. During the hospital course, telemetry showed PVCs that decreased in frequency paralleled with a decrease in CRP and troponins. Repeat EKGs showed normalization of QTc interval. The patient declined any implantable device placement or procedures and was eventually discharged with a heart monitor and a beta blocker. On initial follow-up, the patient denied symptoms since the discharge and the heart monitor did not show any VA.

CONCLUSION

Management of TdP generally involves magnesium, lidocaine, and/or chemical/transvenous pacing. However, as described in this case, Tocilizumab can cause QT interval shortening in association with a reduction in CRP and cytokine levels and may be beneficial for use in COVID-19 patients with QT prolongation and VA including TdP. There are no strict guidelines for arrhythmias in COVID-19 patients. Accordingly, more studies need to be done to follow this patient population who are managed with tocilizumab for their eventual outcomes.