Azithromycin/hydroxychloroquine/tocilizumab

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QTc prolongation and off label use: case report

A 49-year-old man developed QTc prolongation during off label treatment with azithromycin and hydroxychloroquine for COVID-19. Additionally, he also received off-label treatment with tocilizumab for COVID-19 [*routes, dosages and outcome not stated*].

The previously healthy man presented with COVID-19 infection, and required mechanical ventilation and extracorporeal membrane oxygenation due to severe hypoxemia and acute respiratory distress syndrome (ARDS). His initial ECG showed narrow QRS, precordial T-wave inversion, QTc of 467ms. Subsequently, he was commenced on azithromycin and hydroxychloroquine. Thereafter, his ECG showed right bundle branch block, prolonged QTc of 539ms, and mild diffuse ST elevation.

Due prolonged QTc, the man's treatment with azithromycin and hydroxychloroquine was discontinued after 2 days. His chest x-ray showed severe diffuse bilateral pulmonary infiltrates consistent with ARDS. Also, his central venous O2 saturation was 79%. His left ventricular ejection fraction (LVEF) was mildly reduced to 40% with marked hypokinesis of basal and mid segments and preserved wall motion of apical segments. Later, he was infused with vasopressin and norepinephrine to maintain adequate mean arterial pressure for refractory hypotension from vasodilatory shock. Later, he started unspecified broad-spectrum antibiotics for possible pneumonia. Subsequently, he received two doses of off-label tocilizumab for signs and biomarkers suggestive of cytokine release syndrome. He continued on V-V ECMO, mechanical ventilation and antibiotics. He had myocardial injury secondary to cytokine storm and a hyperinflammatory state. Subsequently, his oxygen requirement decreased gradually. Six days later, his chest x-ray and transthoracic echocardiographic showed normalisation of LVEF to 55% and marked improvement in regional wall motion abnormalities. On day 12, he was decannulated from V-V ECMO.

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