

Tocilizumab

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Blood stream infection of methicillin-susceptible *Staphylococcus aureus* and off label use: case report

A 62-year-old man developed blood stream infection of methicillin-susceptible *Staphylococcus aureus* (MSSA) following off label treatment with tocilizumab for COVID-19 pneumonia.

The man presented in the emergency room (ER) with increasing shortness of breath and dizziness. Before the presentation, the emergency medical services (EMS) observed his oxygen saturations were in 40's, therefore, he required 100% oxygen via a non-rebreather. Then, his oxygen saturation was improved to 91%. His medical history was significant for hypertension and hyperlipidaemia. He had been experiencing cyclical temperature for 3 days, with a maximum temperature of 38.9°C. Then, he was intubated due to his condition. Subsequently, his RT-PCR test was positive for SARS-CoV-2. Chest X-ray findings were suggestive of COVID-19 pneumonia. Therefore, on day 1 of hospitalisation, he received remdesivir and off label treatment with tocilizumab [route and dosage not stated]. The following day, he received off label treatment with convalescent-anti-SARS-CoV-2-plasma [convalescent plasma]. Thereafter, a little improvement was noted in his condition. However, his fever, shortness of breath and anosmia was persistent. Therefore, he received off label treatment with methylprednisolone. Later, on day 7, he was extubated. Thereafter, on day 14, he started receiving enoxaparin-sodium [enoxaparin] due to high oxygen requirements and elevated D-dimer. Eventually, he developed pneumothorax due to COVID-19 pneumonia. Also, his blood culture was positive for *S. aureus*.

The man then started receiving vancomycin along with piperacillin/tazobactam. Later, the blood cultures were positive for methicillin-susceptible *S. aureus* (MSSA). Based on this, his medications were adjusted. His pneumothorax was persisted due to the air leak. He then underwent implantation of the right upper lobe endoscopic endobronchial valve. His shortness of breath resolved. Later, the chest tube was removed, and he was placed on a peripherally inserted central catheter line. Eventually, he was discharged from the hospital.