Multiple drugs

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Off-label use and lack of efficacy: case report

A 14-year-old girl received off-label treatment with tocilizumab, nitazoxanide and baricitinib for COVID-19. She exhibited lack of efficacy to dexamethasone, meropenem, tocilizumab and remdesivir for COVID-19.

The girl, who had relapse Hodgkin's lymphoma received treatment with therapy with carmustine, etoposide, cytarabine, melphalan and autologous HSCT. On the day she was scheduled to receive stem cell infusion, she asymptomatically tested positive for COVID-19. After ten days, she developed respiratory distress, fever and had elevated inflammatory markers. She had cardiorespiratory deterioration and was transferred to the paediatric ICU where she received mechanical ventilation and ionotropic support. She received treatment with IV remdesivir 200mg loading dose, followed by 100mg once daily for 10 days and off-label therapy with IV dexamethasone 6 mg/day for 10 days, for COVID-19 acute respiratory distress syndrome (ARDS). Additionally, she received piperacillin–tazobactam, which was then switched to meropenem, concurrent with teicoplanin for serious bacterial infections (SBI). Her treatment with tocilizumab was withheld until SBI control on day 14. Her imaging studies were consistent with the diagnosis of COVID-19 pneumonia. Despite treatment, she remained SARS-CoV-2 positive, had cardiorespiratory deterioration, remained lymphopenia and had reduced inflammatory markers. She was cannulated for ECMO on day 20. Considering her condition, she received a second course of IV remdesivir, IV dexamethasone 13.2 mg/day in two doses for 10 days which was subsequently weaned off at 1 mg/day. Additionally, she received IV nitazoxanide 500mg 12 hourly for 14 days. On day 46, she underwent tracheostomy following which she had a pulmonary deterioration. A CT scan was suggestive of COVID-19 progression, despite two negative SARS-CoV-2 PCRs. Considering her elevated procalcitonin level, she was treated for suspected SBI with teicoplanin, meropenem, and linezolid for 14 days. Bronchoalveolar lavage revealed extensive inflammation. She was restarted with IV dexamethasone 13.2 mg/day for 21 days which was weaned off to 0.5 mg/48 hours. Additionally, she was started with enteral baricitinib 4 mg/day for 48 days. After one week of remdesivir and nitazoxanide therapy completion, she was again positive for SARS-CoV-2 PCR. Her therapy with nitazoxanide and remdesivir were restarted. Gradually, her condition improved and ECMO was discontinued after 39 days (hospitalisation day 57). Subsequently, her condition improved; after two weeks, she was SARS-CoV-2 PCR negative following which, remdesivir and nitazoxanide were discontinued. Her treatment with baricitinib was discontinued on day 98 and dexamethasone was weaned off. After 132 days, she was discharged for rehabilitation. Her ventilation support was stopped on day 195. Despite reduced lung function, she was deemed fit for discharge to her local hospital for further rehabilitation on day 218.

van der Velden FJS, et al. Case Report: Severe Acute Pulmonary COVID-19 in a Teenager Post Autologous Hematopoietic Stem Cell Transplant. Frontiers in Pediatrics 10: 3 Mar 2022. Available from: URL: http://doi.org/10.3389/fped.2022.809061

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