Multiple drugs

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Various toxicities: case report

A 57-year-old man exhibited lack of efficacy during treatment with mezagitamab, unspecified proteasome inhibitors and unspecified immunomodulators for multiple myeloma. Additionally, he developed COVID-19 infection and lymphopenia during immunosuppressive treatment with melphalan, bortezomib, cyclophosphamide and fludarabine, and cytokine release syndrome during treatment with bb21217 for refractory multiple myeloma [*routes not stated; not all time to reactions onsets and dosages stated*].

The man with a 4 year history of IgG-κ multiple myeloma presented in February 2020 due to disease progression. He was penta-refractory (refractory to unspecified two proteasome inhibitors, unspecified two immunomodulators and mezagitamab [anti-CD38 antibody] and had previously received nine lines of therapy. In early February 2020, he was enrolled in a clinical study of bb21217. He received bridging therapy with bortezomib and melphalan while awaiting bb21217 manufacturing. He was asymptomatic and testes negative for COVID-19 infection by PCR 2 days prior to a planned 3-day course of lymphodepleting chemotherapy. He received lymphodepleting chemotherapy comprising of fludarabine 30 mg/m^2 and cyclophosphamide 300 mg/m^2. Approximately 24 hours after receiving the first dose of chemotherapy, he returned to the clinic with cough, diarrhoea and fever. Nasopharyngeal PCR test confirmed COVID-19 infection. He was admitted for further observation.

The man was treated with unspecified granulocyte colony stimulating factors for neutropenia. After 3 days of hospitalisation, he was discharged with instructions to self-isolate at home. Thirty-nine days after COVID-19 infection diagnosis, nasopharyngeal PCR test confirmed clearance of COVID-19 infection.

Hence, the man re-initiated the 3 day course of lymphodepleting chemotherapy in preparation for bb21217 administration. At that point, COVID-19 antibodies were detected at a titer of 1:2880 and his inflammatory markers were normal. On the day of bb21217 infusion, he showed profound leukopenia. Twelve hours after bb21217 infusion, he developed tachycardia and fever consistent with grade 1 cytokine release syndrome. On day 2, cytokine release syndrome escalated to grade 2 along with hypotension (81/52). He received fluids with transient response. Hence, he was treated with tocilizumab. Then, he developed hypotension and fever. The cytokine release syndrome recovered by day 6. The cytokines returned to pretreatment levels by day 9. Blood counts improved by day 12, but lymphopenia persisted through day 14. At 1 month follow-up, he did not experience any other complications. He remained COVID-19 negative. He showed partial response to bb21217 infusion. Repeat COVID-19 antibody titer was 1: 960. At 2 month follow-up, COVID-19 antibody titer was 1:320.

Madduri D, et al. Anti-BCMA CAR T administration in a relapsed and refractory multiple myeloma patient after COVID-19 infection: a case report. Journal of Medical Case Reports 15: 90, No. 1, 19 Feb 2021. Available from: URL: http://doi.org/10.1186/s13256-020-02598-0

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