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LETTER TO THE EDITOR

Comment on: Repeat-positive SARS-CoV-2 in a child with cancer: Intermittent positive results of SARS-CoV-2-RNA in nasopharyngeal swabs during chemotherapy in a child with acute leukemia

To the Editor:

We have read the case entitled "Repeat-positive SARS-CoV-2 in a child with cancer" written by Radhakrishnan and Gangopadhyay[1] with great interest. This study reported a child with acute lymphoblastic leukemia (ALL) whose chemotherapy was interrupted due to repeat positive tests for SARS-CoV-2.[1] Similarly, we present a 3-year-old female child diagnosed with precursor B-cell acute lymphoblastic leukemia (B-ALL). The patient was started on prednisolone 60 mg/m^2 on the berlin-frankfurt-munich (BFM) protocol for pediatric pcute lymphoblastic leukemia (ALL-BFM protocol). On the sixth day of the induction protocol, she developed a fever and sore throat. Nasopharyngeal swab samples of the patient and the accompanying parent (father) for SARS-CoV-2 by PCR were positive. Her father had had a single dose of Pfizer-BioNTech® mRNA vaccine 10 weeks prior and had Covid-19 symptoms that persisted for 2 days. As per institutional policy, the patient was transferred and isolated in the Covid-19 service of the hospital. On the eighth day of the protocol, she was found to be a prednisolone good responder and although vincristine-daunorubicin treatment was scheduled on the same day, they were not given and prednisolone alone was continued. Since the SARS-CoV-2 PCR of a nasopharyngeal swab sample was still positive on Day 10, azithromycin was given at a dose of 10 mg/kg for 3 days. On Day 14, as a repeat SARS-CoV-2 PCR was negative, chemotherapy was reinitiated. No residual blasts were seen in the bone marrow on Day 15. She received induction chemotherapy without interruption until Day 21. However, the SARS-CoV-2 PCR screening test (Delta variant) during the neutropenic period was again positive on Day 22. As the control SARS-CoV-2 PCR tests were positive, virus culture was performed. There was no growth in the viral culture. The SARS-CoV-2 PCR of the patient under azithromycin prophylaxis was negative after neutrophil recovery and then chemotherapy protocol was continued.

She was found to be in morphologic and cytogenetic complete remission on Day 33. Since her father was positive for Covid-19, her 35-week pregnant mother had accompanied the patient during the remaining chemotherapy period. The mother had been vaccinated with a single dose of mRNA vaccine at 32 weeks of pregnancy. At the time for the second dose of cyclophosphamide in the early intensification of BFM protocol, the patient developed neutropenic fever and cough with

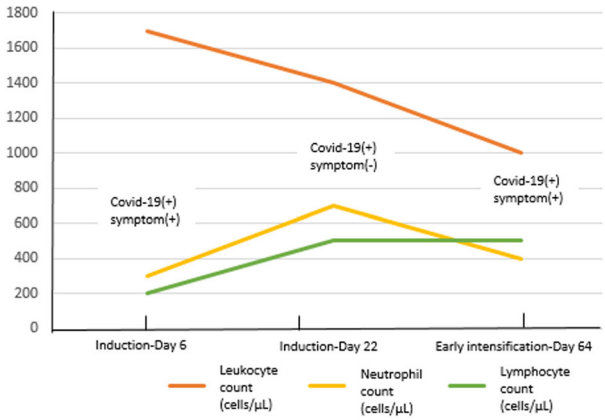

FIGURE 1 Changes in leukocyte, neutrophil and lymphocyte counts, and positive results of SARS-CoV-2-RNA in a child with leukemia during ALL-BFM protocol

SARS-CoV-2 PCR test positivity, whereas her mother had no signs and symptoms and a negative SARS-CoV-2 PCR test. Clarithromycin and piperacillin-tazobactam along with granulocyte colony-stimulating factor were immediately commenced for febrile neutropenia (Figure 1). Anti-SARS-CoV-2 IgG was found to be positive at 384 BAU/ml. She has been well without any evidence of Covid-19 recurrence in the consolidation phase.

Similar to the previously reported studies, neutropenic and/or lymphopenic periods may have contributed to the development of recurrent Covid-19 infection in our case.[2,3] Although macrolides have been used with variable success in Covid-19 infection, there may have been some clinical benefit with macrolides in our case.[4,5]

There are still many unknown facts about the immunological response to Covid-19 infections, especially in cancer patients. Cancer physicians should be aware of repeat positive tests during intensive chemotherapy.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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