Letter to the Editor

Prolonged viral shedding of SARS-CoV-2 in patients with acute leukemia

Dear editor,

We reported the 21-plus days isolation of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in seven patients with a diagnosis of acute leukemia and confirmation of coronavirus disease (COVID-19) admitted to the Hematology Department of the Guillermo Almenara Irigoyen National Hospital (Lima, Peru), between October 2020 and February 2021, in which none of the subjects developed the severe or critical sickness (Table 1). The diagnosis was made from an antigenic test or reverse transcriptase polymerase chain reaction (RT-PCR), which were taken through a nasopharyngeal swab that was performed as a prerequisite to the initiation of specific treatment for the underlying disease.

Most of them were adults, and had a diagnosis of acute lymphoblastic leukemia in remission and were waiting their next course of chemotherapy. Viral RNA was isolated for more than 82 days after initial diagnosis (from 21 to 82 days). The case with the longest positive test time corresponded to the patient with disease relapse, who developed a moderate type of COVID-19. At the date of the report, six patients were alive and one died due to the hematological disease activity.

The first reported case of SARS-CoV-2 infection in Peru was made on March 6, 2020. As at the day August 10, 2021 the country registered a total of 2,127,034 confirmed cases, 197,102 deaths and a fatality ratio of 9.27%; being one of the most affected countries in Latin America and having reported the highest fatality rate in the world.1

Unfortunately, the knowledge of this subject is incomplete and the approach to these patients is limited. Besides, there are no solid recommendations to suspend measures aimed at preventing the transmission of SARS-CoV-2. The US Centers for Disease Control and Prevention recommended that this suspension should be given at least 10 to 20 days after the onset of symptoms; However, they also reported that viruses with replication capacity can be isolated in these patients beyond 20 days after the initial diagnosis, even in asymptomatic patients; in addition, they suggested using an evidence-based strategy, after at least two negative respiratory samples, separated by at least 24 hours, for detection of viral RNA.4 But nevertheless; It should be mentioned that a positive RT-PCR test does not necessarily mean viral replication or contagiousness; for this, it is necessary to carry out a viable viral culture, not available in our environment. Recently, the German Society of Hematology and Oncology recommends not to dismiss the possibility of infectivity and to continue with appropriate preventive measures.5 Given this situation, we express our concern about the possibility of contagion and the prevention measures for the transmission of SARS-CoV-2 in hematological patients who have reported a prolonged viral shedding.

The data presented show that patients with acute leukemia can persistently present SARS-CoV-2 beyond 60 days as a result of a deficient immune response and, considering the lack of availability of detection methods for active viral replication, it would be advisable to maintain COVID-19 isolation measures. More robust data needs to be generated to correlate viral detection time with infectious power in the immunosuppressed patient with SARS-CoV-2 infection.
Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES


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Received 20 September 2021
Accepted 29 November 2021
Available online 19 January 2022

https://doi.org/10.1016/j.htct.2021.11.017
2531-1379/
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Table 1 – Patients with acute leukemia and prolonged viral shedding of SARS-CoV2, at the Guillermo Almenara Irigoyen National Hospital, Lima, Peru (October 2020 to February 2021).

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>Sex</th>
<th>Acute leukemia</th>
<th>Disease status</th>
<th>Diagnostic test</th>
<th>Severity</th>
<th>Positive test time (days)</th>
<th>Final condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17</td>
<td>M</td>
<td>ALL - B</td>
<td>Active (Debut)</td>
<td>Antigenic test</td>
<td>Mild</td>
<td>43</td>
<td>Alive</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>M</td>
<td>ALL - B</td>
<td>CR</td>
<td>RT-PCR</td>
<td>Mild</td>
<td>58</td>
<td>Alive</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>M</td>
<td>AML</td>
<td>Active (Debut)</td>
<td>Antigenic test</td>
<td>Moderate</td>
<td>82</td>
<td>Alive</td>
</tr>
<tr>
<td>4</td>
<td>41</td>
<td>M</td>
<td>ALL - B</td>
<td>CR</td>
<td>Antigenic test</td>
<td>Mild</td>
<td>34</td>
<td>Alive</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>F</td>
<td>ALL - B</td>
<td>Active (Relapse)</td>
<td>Antigenic test</td>
<td>Mild</td>
<td>32</td>
<td>Dead</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
<td>F</td>
<td>ALL - B</td>
<td>CR</td>
<td>RT-PCR</td>
<td>Mild</td>
<td>21</td>
<td>Alive</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>F</td>
<td>ALL - B</td>
<td>CR</td>
<td>RT-PCR</td>
<td>Mild</td>
<td>54</td>
<td>Alive</td>
</tr>
</tbody>
</table>

ALL-B: B-cell acute lymphoblastic leukemia; AML: Acute myeloid leukemia; CR: Complete remission; RT-PCR: reverse transcriptase polymerase chain reaction assay.