Interleukin 6 (IL-6) in Patient with COVID-19 Infection: The Cross-Sectional Study

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Dear Editor in Chief

To update data published in the article “Leukocytes Parameters, CRP, and Ferritin in Iranian Patients with COVID-19 Infection: A Cross-sectional Study” in Iranian Journal of Medical Microbiology. 2021,15(3): 361-368 (1), we analyzed the IL-6 parameter in the article mentioned above’s statistical population (2, 3). Here, we share our new findings as a Letter to the editor.

SARS-CoV-2 (coronavirus 2 or 2019-nCoV) can cause Cytokine release syndrome (CRS) (4). Many inflammatory cytokines are released in the body of patients with CRS due to leucocyte activation (5). IL-6 is a chemokine that has increased in CRS. Also, IL-6 stimulates the secretion of acute-phase proteins, such as C-reactive protein (CRP), ferritin, and fibrinogen, and inhibits albumin synthesis (6). Therefore, the increased IL-6 is a potential candidate as a biomarker for SARS-CoV-2 detection.

Due to the significance of this subject, IL-6 parameter was analyzed in the samples collected from subjects who tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by Polymerase Chain Reaction (PCR). IL-6 was measured by IMMULITE 2000xpi (Siemens, Germany), and PCR test was done by Roje kit (Viga SARS-COV-2, ROJE Technologies, Iran). The rdp and N genes were identified by Pishtaz kit (Pishtaz-Teb Diagnostics, Tehran, Iran) (1).

In the 1st step, due to the positive test results, 136 men and 125 women were selected. Of these patients, 19 men and 15 women were excluded due to a lack of information in their records. Therefore, the samples collected from 120 men (23-80 age range-mean age range of 56.3) and 110 women (23-82 age range-mean age range of 57.9) were analyzed in terms of IL-6 parameter.

Statistical analysis was carried out by SPSS software V.24 (SPSS Inc., Chicago, IL, USA) using the Chi-square test. A P-value less than 0.05 was considered significant.

The analyzed results showed that IL-6 parameter had increased more in men and women infected by SARS-CoV-2 (76.7% and 87.3%, respectively) than normal people (up to 5.9 pg/mL). Table 1 shows the IL-6 results compared in both control and infected groups.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Male (n=120) Median (SD)</th>
<th>Male (n=210) Median(SD)</th>
<th>Female(n=155) Median(SD)</th>
<th>Female(n=150) Median(SD)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL-6 (pg/mL)</td>
<td>61(81)</td>
<td>2.38(1.07)</td>
<td>0.03</td>
<td>56.09(67.6)</td>
<td>2.35(1.08)</td>
</tr>
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</table>

Due to our findings, IL-6 was increased due to SARS-CoV-2 infection and had the potential to be considered a biomarker for detection and monitoring the progression of COVID-19 infection.

Conflict of Interest

The authors declared no conflict of interest.
References


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