

Dear Editor,

First of all I would like to thank you on behalf of all coauthors for reviewing our manuscript.

Our responses to the comments made by one reviewer are attached herewith.

I would be happy to see and give responses for further comments if done by reviewers before a final editorial decision will be made.

Thank you for consideration of our manuscript, and we hope this manuscript will be more interesting for the readers of WJCC.

### **Responses to reviewer's comments**

#### **Reviewer #1:**

The authors reported a case of suspected hematologic malignancy after mRNA-based COVID vaccination in a 77-year-old female patient. I think the authors tried to explain the complicated role of "leukemoid reaction" after COVID vaccination. But I also think there were shortcomings in this report.

1. Lack of evidence supporting "leukemoid reaction", especially neutrophil count.  
  
→ You are right. As you said, this patient is not exactly leukemoid reaction according to the definition of leukemoid reaction. We wanted to talk about a situation that can be mistaken for leukemia as severe leukocytosis with immature cell rather than leukemoid reaction after COVID-19 vaccination.
2. There were short-time elevations of ANA, anti-dsDNA Ab (reference range not provided), and several serum indexes representing liver function, but no diagnosis was given and liver-derived diseases (e.g. cirrhosis) were not ruled out.

→ This patient had no underlying liver disease and no history of hepatitis or drug abuse. As you said, because ANA and liver enzyme was elevated, we performed various tests. There was no evidence of liver disease such as liver cirrhosis or autoimmune hepatitis. Results were described in this paper.

3. Lack of other necessary data to exhibit peripheral immune status, such as PBMC classification in detail.

→ You are right. Unfortunately, we did not do PBMC classification. It is difficult to isolate and identify NK cells and dendritic cells in general clinical situations.

4. The patient received treatment for symptoms rather than leukemoid reaction, the conclusion is not convincing.

→ As you know, treatment for the leukemoid reaction is to treat the underlying disease that causes the leukemoid reaction. But, there was no disease that could cause a leukemoid reaction in our patient, so symptomatic treatment was performed like most vaccine side effects, and the outcome was very good.

#### **Reviewer #2:**

The manuscript examined an uncommon case of leukocytosis after COVID-19 vaccination. It presented with multiorgan involvement of pleural effusion, thrombocytopenia, and transaminitis. However, several parts of the paper need to be improved:

0) English language could be improved.

→ We corrected according to your advice.

1) Need to elaborate more on the abstract.

→ The abstract content was additionally supplemented.

- 2) Please insert information on COVID-19 status, testing, and if there any symptoms ever present prior or at the time of vaccination?

→ Whether the patient was infected with COVID and abnormalities prior to vaccination were additionally described.

- 3) Why there is no testing for COVID-19 especially in the presentation with dyspnea (on the result)?

→ COVID-19 PCR result was negative. Patient complained of dyspnea, but there was no oxygen demand. It was added to the laboratory examination part.

- 4) Is it possible that the patient presented with early Multisystem inflammatory syndrome? why or why not?

→ She had renal replacement therapy and thrombocytopenia, but she no cardiac problems and neurologic disease such as encephalopathy. The patient's condition recovered in a short period of time without special treatment, and no COVID-19 infection was confirmed. Therefore, she is not possible early multisystem inflammatory syndrome.

- 5) Are there any risk factor for hepatitis or cirrhosis? such as alcohol intake, drug abuse, needle sharing history etc.

→ She has no problem related to alcohol intake, drug abuse. All viral hepatitis tests were negative.

- 6) Is it possible that the patient presented with Dengue Hemorrhagic Fever with pleural effusion and secondary infection? The characteristic matched in

thrombocytopenia, fever, myalgia, dyspnea with pleural effusion, and transaminitis.

→ Dengue fever is not endemic in South Korea and she has no travel history. We added this fact to the present illness and discuss part.

7) Please correct the structure of the table as some elements are squeezed with inappropriate column size.

→ The table has been rewritten.

8) Please limit the references to the last 5 years if possible to ensure novelty and newness of the used information.

→ References were also rewritten from papers published in the last 5 years.

9) For numbers < 10 please use it in word form, except in specific cases.

→ We corrected according to your advice.

10) Please also declare the protocol/ethic review number on the ethic declaration instead of just the institution.

→ The protocol/ethics review number is also indicated. (2022-08-008)

11) There is an unintelligible paragraph at the end of the conclusion section after "This is the first case...." paragraph and before the acknowledgements section.

→ The conclusion was rewritten.

12) Formatting of the paper could be improved. For instance, alignment and indentation of some paragraph is not appropriate.

→ The overall format of the thesis was revised and improved.

Hee Jeong Lee, M.D. PhD.

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