

Dear Editors and Reviewers:

Thank you very much for your careful review and constructive suggestions with regard to our manuscript "Acquired coagulation dysfunction resulting from Vitamin K-dependent coagulation factors deficiency associated with rheumatoid arthritis: case report and literature review" (NO: 61557). We have read the comments carefully and made revisions accordingly. Revised parts are marked in red in revisions. The responses to the reviewer's comments are as follows:

- 1- Abstract: The case summary should be rewritten as appropriate. In this part, the authors should briefly describe the clinical and laboratory findings of the case and provisional diagnosis as well as the treatment received.

Response: The Abstract has been revised as required. We briefly described the clinical and laboratory findings of the case and provisional diagnosis as well as the treatment received in case summary.

- 2- Introduction: More literature review on coagulopathy and its association with RA should be provided. I recommend moving a few paragraphs from the discussion section to the introduction. The objectives of this case study should be clearly defined to investigate the possible etiology of coagulopathy in RA.

Response: The Introduction has been revised as required. We have added more literature review on coagulopathy and its association with RA in this part according to the reviewer's suggestion.

- 3- Case report: The APTT mixing study should be clarified how it was conducted either immediate or delayed. You should perform a delayed mixing study to evaluate or rule out the presence of coagulation factor inhibitors. The DAS score should be evaluated to determine the degree of RA activity. Factors II, V, and X were only initially evaluated prior to treatment, however, other vitamin K-dependent coagulation factors such as factor VII and IX should be evaluated prior to treatment. Liver function testing should be performed prior to treatment for the case to rule out possible hepatic causes of coagulopathy in this condition.

Response:

In the APTT mixed correction experiment, the APTT was determined immediately after the blood mixed. The primary purpose of the APTT delayed mixing study is to evaluate the presence of coagulation factor VIII inhibitors. Basing on the comprehensive evaluation of the patient's history and various examination results, we have ruled out the presence of coagulation factor VIII inhibitors, so we did not perform the delayed mixing study.

The DAS score of the patient has been added to the manuscript. We are very sorry for that we did not mention it in the previous manuscript.

First, we believe the test results of Factors II, V, and X prior to treatment was enough to help initially differentiate Vitamin K-dependent coagulation factor deficiency from other causes of coagulation dysfunction such as liver disease, sepsis DIC and so on. Second, after treatment with Vitamin K1 supplementation, the patient's hematuria symptoms improved significantly, which in turn confirmed

the diagnosis of Vitamin K-dependent coagulation factors deficiency. Therefore, Factors II, V, and X were only initially evaluated prior to treatment. At last, evaluating more coagulation factors after treatment can help assessing the patients' improvement and the risk of thrombosis.

Liver function testing is a routine examination after hospitalization in our hospital. The results didn't indicate obvious abnormality, so we have ruled out possible hepatic causes of coagulopathy in this condition. We are very sorry that the liver function testing results were not mentioned in previous manuscript. We have added the liver function testing results in revisions and uploaded the original data as supplementary materials.

- 4- Discussion: The discussion is unnecessarily long and needs to be focused.

Response: We have made revisions in discussion according to the reviewer's comments.

- 5- The figure should be supplied in better resolution.

Response: We have adjusted the figure resolution high enough to meet the Reviewer's suggestion.

- 6- There are many structural, grammatical, punctuation, and capitalization error that should be reviewed by a native English speaker, for example:

Response: First, we are sorry for that, and we have made revisions carefully and the article has been reviewed and revised by a native English speaker. The Non-Native Speakers of English Editing Certificate will be uploaded.

Once again, thank you very much for your comments and suggestions!