Peer Review File

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Review comments:

Major questions:

1) The Author not defined if AF was present before ICU admission or developed during ICU stay. This point is important also with reference to the lower frequency of oral anticoagulation in the high RDW group (table 1): a lower rate of oral anticoagulation could be attributed to the onset of AF during ICU stay, a setting in which oral therapy could not be administered.

If you don't have access to these data, you should discuss this item in the Discussion section and in the Limitation section.

Reply 1: We totally agree with the reviewer's idea that the lower rate of oral anticoagulation in the non-survivors may be related with the new onset of AF during ICU stay. As new onset of AF is usually thought to be an independent prognostic factor in the patients admitted into the ICU (1,2). Therefore, identifying the heterogeneity between sustained AF and new onset in the critically ill patients is also an interesting topic. Initially we tried to distinguish the patients diagnosed of new onset AF from all critically ill patients with AF. However, it is difficult to identify new onset of AF in MIMIC III. Hence, all the patients diagnosed of AF in ICU were enrolled in this study. We sincerely thank the reviewer for the kind suggestion. According to the advice, we discuss the item Discussion section and in the Limitation section.

Changes in the text: According to the reviewer's advice, we discussed the new-onset AF in the Discussion part (Paragraph 2 in the Discussion section) and Limitation part (Paragraph 6 in Discussion section)

2) The Authors should describe the reasons of ICU admission in their population (trauma, sepsis, cardiac failure, respiratory failure…) and add this item to the logistic analysis and to the propensity score matching. My concern is that also the reason of ICU admission should be a confounder and could be associated to mortality (and likely to RDW), independently of SOFA score.

If you don't have access to these data, you should discuss this item in the Discussion section and in the Limitation section.

Reply 2: We are truly thankful for your kind suggestions. We agree with the reviewer's opinion that the reasons for ICU admission are related with the short- and long-term mortality of critically ill patients. In MIMIC II, the reasons for admission are available. Therefore, previous studies usually listed the admission reasons of patients in MIMIC II (3). However, the reasons for ICU admission are unavailable in MIMIC III. Only a brief unprecise description for the patient's admission is available in the ADMISSIONS table (https://mimic.physionet.org/mimicdata/datatypes/). We agree entirely with the reviewer's idea that the reasons for ICU admission are important confounders. We are sorry that we are unable to add the reasons for ICU admission into the logistic analyses. According to the suggestion, we also discussed the problem in the Limitation section.

Changes in the text: According to the reviewer's advice, we discussed the limitation of our study in the Limitation part (Paragraph 6 in Discussion section).

3) In Method section:

How do you define patients with deficiency anaemia?

How do you define patients with malignancy? Both metastatic and non-metastatic cancer? Did you include also haematologic malignancy?

Reply 3: We are gratefully sorry for our negligence of properly describing the comorbidities in the manuscript. According to your advice, the definitions of comorbidities were described in the Methods section. Generally, iron deficiency anemia, folate deficiency anemia, protein deficiency anemia, vitamin B12 deficiency anemia and unspecified deficiency anemia were regarded as deficiency anemia (Paragraph 2 in the Methods section). Meanwhile, malignancy was defined as the prevalence of both metastatic and non-metastatic cancer. Meanwhile, haematologic malignant diseases were also included in accordance with previous studies (4,5).

Changes in the text: According to the reviewer's advice, we described the details of comorbidities in the Methods section (Paragraph 2 in Methods section).

4) In Discussion section:

In the first sentence of Discussion the Authors should refer to the setting and population. 'In the current study, we demonstrated that high levels of RDW might be associated with increased 28 in- and out-of-hospital mortality rates'.

Reply 4: We are very grateful for your advice. In the initial manuscript, we didn't describe the setting and population of our study precisely. Therefore, we rewrited the first paragraph in Discussion section to illustrate our findings more precisely.

Changes in the text: We described the findings of our study more precisely in Discussion section (Paragraph 1 in Discussion section).

Minor observations

- *Pag 2 'is the leading': I thing should be better: 'is a leading', 'one of the leading'*

Reply: We thank the reviewer's comment and make changes in the manuscript (line 2, page 2; line 2, page 3).

- Pag 4 line 12 less than

Reply: We corrected the grammar error (line 2, page 5).

- Pag 6 line 5 deficiency anemia

Reply: We thank the reviewer's suggestion and make corrections (line 3, page 7).

- Pag 6 line 22 Could you specify the number of patients with stroke, heart failure or deficiency anemia?

Reply: We added the number of enrolled patients with stroke, heart failure and deficiency anemia in the manuscript (line 19-22, page 7).

- In Discussion section: In the first sentence of Discussion the Authors should refer to the setting and population. 'In the current study, we demonstrated that high levels of RDW might be associated with increased 28 in- and out-of-hospital mortality rates'.

Reply: We rephrased the findings of our study according to the reviewer's opinion (Paragraph 1 in Discussion section).

- Fig 1 eligible patients; Records instead of recocds

Reply: We are sorry for our mistakes and make corrections in Figure 1.

- Table 1 Row: admission type, urgent; Column, survivors: the number in brackets in not a percentage.

Reply: We sincerely apologize for our errors and replace the percentage in brackets.