Letter to the Editor: Admission Values of Plasma Biomarkers Predict the Short-Term Outcomes in Acute Aortic Dissection

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Dear editor,

We have read with great interest the article titled "Admission Values of Plasma Biomarkers Predict the Short-Term Outcomes in Acute Aortic Dissection" by Xie et al [Xie 2021]. The article pointed that the D-dimer ≥5.9 mg/L and type A AAD were independently associated with in-hospital mortality in AAD patients. Moreover, subgroup analysis proved that the elevated D-dimer was related to poor prognosis in type A AAD.

We have some comments on this conclusion. First, the authors collected age, gender, smoking, drinking, blood pressure (BP), and some serum measurements parameters for analysis. But they didn't clarify whether the patients with other underlying diseases at the same time like renal dysfunction, hepatic dysfunction, coronary artery disease history, pulmonary embolism (PE), immune system diseases, inflammatory disease, Marfan's syndrome, stroke history, or cerebral malperfusion underwent surgery, high sensitive troponin T and so on, both of which would impact the outcome of AAD, so we believe it is better to add those parameters to come to a more convincing conclusion. Next, as we know, AAD is a rare but fatal condition with a lethality rate of 1 to 2% per hour after the onset of symptoms in untreated patients [Mészáros 2000], early control of heart rate (HR) and BP are very important, but the authors didn't collect the usage of cardiovascular active drugs, and the fluctuation of the patient's heart rate and blood pressure after admission, which constitute confounding bias to reach such a conclusion. Third, Hazui et al reported that the level of D-dimer in AAD depended on the size of the false lumen. AAD patients with a long dissection length can produce D-dimer more abundantly than those with a short dissection length [Hazui 2006]. As an independent parameter, the accuracy of D-dimer is insufficient, and its systematic evaluation in combination with other indicators may be required [Suzuki 2009; Nazerian 2018]. The authors also didn't analyze those risk factors, and no subgroup analysis, so we believe it is better to add those parameters and further investigation about D-dimer in the prognosis of AAD, it will come to a more convincing and practical conclusion.

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