Reviewer’s report

Title: Preoperative uric acid predicts in-hospital death in patients with acute type A aortic dissection

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Reviewer: Kanhua Yin

Reviewer's report:

Dr Zhang and colleagues evaluated the prediction valve of UA for in-hospital mortality among type A aortic dissection patients. A total of 186 patients were enrolled. Uni- and multivariate logistic regression were performed to identify the risk factors for in-hospital mortality. The authors used AUC to determine the cutoff value of UA levels.

The purpose of this study is laudable. However, there are severe issues in the statistical model building:

1. Many risk factors were missing in the regression model. Since the outcome was in-hospital mortality, several important variables, such as coronary artery involvement (preop MI/ST-T elevation), malperfusion (AKI, intestinal ischemia..), CKD, transfusion, Marfan or other connective tissue diseases, prior cardiovascular surgery, number of entry tears, emergent vs urgent procedure, surgeons' experience, should be included in the analysis. Lacking these factors may very likely bias the results.

2. Total arch, hemiarch replacement, and Bentall should be treated as a single categorical variable, since they were mutually exclusive.

3. Using forward selection method to determine the variables included in the multivariate analysis is not ideal. Confounders and other factors related to in-hospital mortality should be included (i.e., based on science approach).
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