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Relationship between the level of plasma D-dimer and the in-hospital mortality in patients with type A aortic dissection

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Objective: To investigate the predictive value of plasma D-dimer for in-hospital mortality in patients with type A acute aortic dissection (AAD).

Methods: We prospectively observed 133 consecutive suspected patients admitted in emergency department of our hospital from February 2015 to January 2016 and all of them were diagnosed as AAD with CTA. They were divided into two set of groups: (1) In-hospital mortality group, n=l9 and Survival group, n=l14 and (2) D-dimer \geq 20 ug/ml group, n=36 and D-dimer<20 ug/ml group, n=97. Plasma D-dimer level was measured at admission in all patients, and the predictive value of D-dimer for in-hospital mortality was determined by uni- and multivariate Cox regression analysis.

Results: The patients were at the mean age of (52.0 ± 10.7) years, with the in-hospital stay of (12 ± 10) days. The total in-hospital mortality was 14.3% (19/133). Compared with Survival group, the in-hospital mortality group presented higher D-dimer level, P<0.05. D-dimer ≥ 20 ug/ml group had a higher mortality than that of D-dimer< 20 ug/ml group, P<0.001. The univariate Cox regression analysis indicated that the group with plasma D-dimer ≥ 20 ug/ml had higher risk of in-hospital death (HR 4.845, 95% CI 1.840-12.76, P=0.001). With adjusted age, systolic blood pressure, platelet counts and the intervals from pain to admission, the D-dimer ≥ 20 ug/ml was the independent predictor for in-hospital mortality (HR 3.399, 95% CI 1.252-9.229, P=0.016). When surgery was added to the multivariate Cox regression analysis, however, D-dimer ≥ 20 ug/ml was no longer related to in-hospital mortality (HR 1.185, 95% CI 0.354-3.968, P=0.783), while platelet counts at admission is related to inhospital mortality (HR 0.987; 95% CI 0.977-0.998; P=0.021) in such case.

Conclusion: Before surgical intervention, a higher D-dimer level at admission indicates an increased risk of in-hospital mortality in patients with type A AAD and platelet counts at admission could be considered as a reference index.

Biography

Jinlin Wu has completed his PhD from Peking Union Medical College, China. He is a young Cardiovascular Researcher, currently doing Residency training in Fuwai Hospital, China.

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