Prognostic impact of atrial fibrillation under oral anticoagulation therapy in patients with type B acute aortic dissection

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Funding Acknowledgement: Type of funding sources: None.

Background: Patients with acute aortic dissection (AAD) sometimes are complicated with atrial fibrillation (AF). However, the impact of AF and the use of oral anticoagulation (OAC) on the prognosis of AAD remains unclear. In this study, we evaluated the prognostic impact of AF and OAC therapy in patients with type B AAD.

Methods: Consecutive patients diagnosed with type B AAD between January 2010 and December 2020 in our university hospital were retrospectively analyzed. All patients were divided into 2 groups based on the concomitance with or without AF. The primary endpoint was set as major adverse cardiovascular events (MACEs), including all-cause death, enlargement of aortic diameter, aortic ruptures, and cerebral infarction. Kaplan-Meier survival curves were constructed, and Cox proportional hazards analysis was performed to identify independent predictors of clinical events at 1 year.

Results: A total of 146 patients diagnosed with type B AAD were enrolled, with a mean age of 66±12 years, and 81% of male. Thirty-two patients (22%) experienced MACEs during 272±142 days-observation. Concomitant AF was observed in 27 patients (18%). In the Kaplan-Meier curve analysis, the patients with AF showed significantly higher events than those without AF (log-lank $p<0.001$). In the multivariate Cox proportional hazards models, presence of AF (HR: 2.402, 95% CI: 1.099–4.978 p=0.029), maximum descending aorta diameter (HR: 1.0366, 95% CI: 1.005–1.064 p=0.023), and age$>$75 years (HR: 2.635, 95% CI: 1.268–5.388 p=0.011) were independent predictors of MACEs. Regarding OAC in patients with AF, Kaplan-Meier analysis showed that usage of OAC was associated with a higher incidence of MACEs than those without (log-rank, p=0.036)

Conclusion: Presence of AF, enlargement of descending aorta diameter, and age were independent predictors of future MACEs in patients with type B AAD. Additionally, usage of OAC is associated with MACEs in patients with type B AAD complicated with AF.