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Deep vein thrombosis in upper extremities: clinical characteristics, management strategies and long-term outcomes from the COMMAND VTE Registry

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Background/Introduction: Pulmonary embolism (PE) is caused by blockage of pulmonary arteries by thrombus. The sources of thrombus are thought to be mostly veins in lower extremities, whereas deep vein thrombosis (DVT) in upper extremities rarely occurs spontaneously. Recent studies reported that DVT in upper extremities might have significant complications, and DVT in upper extremities could be increasing. However, there is a paucity of data on patients with DVT in upper extremities, leading to uncertainty in optimal treatment strategies including anticoagulation therapy.

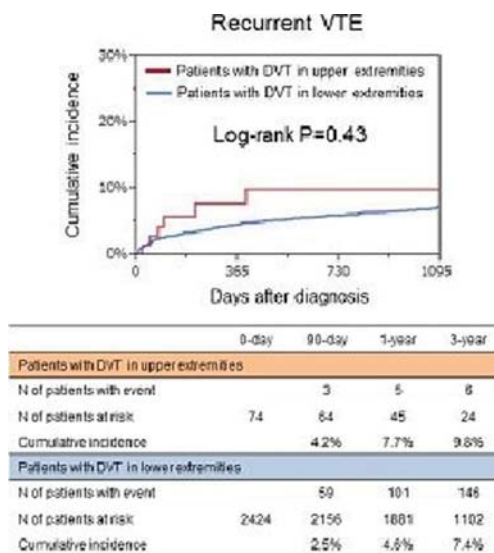
Purpose: We sought to evaluate the clinical characteristics, management strategies, and long-term outcomes of patients with DVT in upper extremities in a large observational database in Japan.

Methods: The COMMAND VTE Registry is a multicenter registry enrolling 3027 consecutive patients with acute symptomatic venous thromboembolism (VTE) objectively confirmed by imaging examination or by autopsy among 29 centers in Japan between January 2010 and August 2014. The current study population consisted of 2498 patients with DVT in upper or lower extremities, after excluding 381 patients with PE only, 144 patients who had thrombus in locations other than upper or lower extremities, and 4 patients with DVT in both upper and lower extremities. The study patients were divided into 2 groups: patients with DVT in upper extremities and patients with DVT in lower extremities. We compared the clinical char-

acteristics, management strategies and long-term outcomes between the 2 groups.

Results: There were 74 patients (3.0%) with upper extremities DVT and 2498 patients (97%) with lower extremities DVT. Patients with upper extremities DVT more often had active cancer at diagnosis (58%) and central venous catheter use (22%). The proportion of concomitant PE at diagnosis was lower in patients with upper extremities DVT than in those with lower extremities DVT (14% and 51%, $P < 0.001$). Discontinuation of anticoagulation therapy was more frequent in patients with upper extremities DVT (63.8% and 29.8% at 1-year, $P < 0.001$). The cumulative 3-year incidence of recurrent VTE was not different between the 2 groups (9.8% and 7.4%, $P = 0.43$) (Figure). After adjusting confounders, the risks of upper extremities DVT relative to lower extremities DVT for recurrent VTE remained insignificant (HR 0.94, 95% CI 0.36–2.01, $P = 0.89$).

Conclusions: The prevalence of patients with DVT in upper extremities was 3.0% in the current large-scale real-world registry. Patients with DVT in upper extremities more often had active cancer at diagnosis and central venous catheter use as a transient risk factor for VTE, and less often had concomitant PE. Patients with DVT in upper extremities had similar long-term risk for recurrent VTE as those with DVT in lower extremities despite shorter duration of anticoagulation.



Kaplan-Meier event curves for recurrence