

Clinical characteristics and outcomes of patients with venous thromboembolism according to diagnosis on weekends versus weekdays: from the COMMAND VTE Registry

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Background/Introduction: The medical systems of hospitals often differs between on weekends and weekdays. These differences could lead different clinical outcomes for patients with acute medical conditions that require complex treatment strategies. However, the effect of the time of diagnosis on clinical outcomes in patients with acute venous thromboembolism (VTE), including pulmonary embolism (PE) and deep vein thrombosis (DVT), is still controversial.

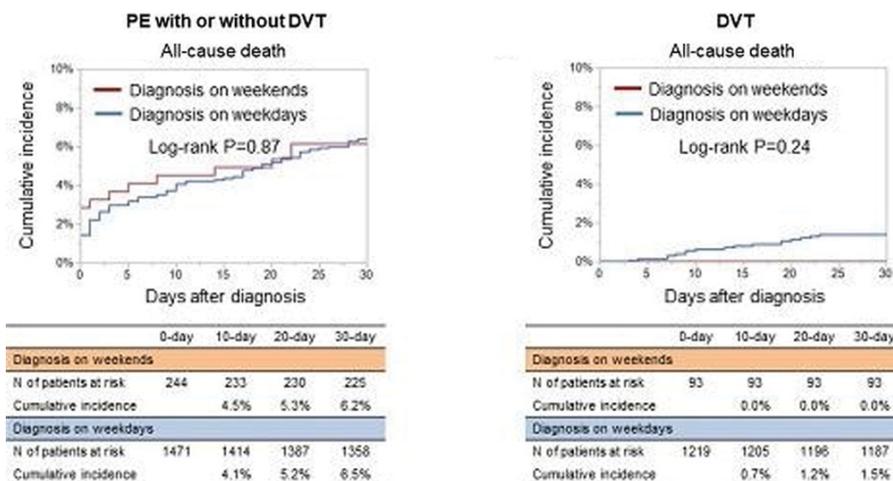
Purpose: We sought to evaluate the clinical characteristics and outcomes of patients with VTE comparing on weekends and weekdays in a large observational database of VTE in Japan.

Methods: The COMMAND VTE Registry is a multicenter registry enrolling 3027 consecutive patients with acute symptomatic VTE objectively confirmed by imaging examination or by autopsy among 29 centers in Japan between January 2010 and August 2014. In the current analysis, diagnosis on weekends was defined as diagnosis during the period from 00:00 hours on Saturday to 24:00 on Sunday. All other times were defined as weekdays. We divided the entire cohort into 2 groups; diagnosis on weekends and diagnosis on weekdays groups, and we compared the clinical characteristics, management strategies and 30-day outcomes between the 2 groups.

Results: The current study population consisted of 337 patients diagnosed on weekends and 2690 patients diagnosed on weekdays. The median days from onset to diagnosis were shorter in the patients diagnosed on week-

ends than in those diagnosed on weekdays (2 days vs. 4 days, $P < 0.001$). The patients diagnosed on weekends presented with PE more frequently (72% vs. 55%, $P < 0.001$), and they showed more severe condition for PE with a higher simplified pulmonary embolism severity index score. The vast majority of PE patients were diagnosed by contrast-enhanced computed tomography in both groups (97% vs. 97%, $P = 0.67$). The patients diagnosed on weekends more often received initial parenteral anticoagulation therapy and thrombolysis than those diagnosed on weekdays. The cumulative 30-day incidence of all-cause death was not significantly different between the 2 groups among PE patients (diagnosis on weekends: 6.2% vs. diagnosis on weekdays: 6.5%, $P = 0.87$), as well as among DVT patients (0.0% vs. 1.5%, $P = 0.24$) (Figure). After adjusting the confounders, the risk of diagnosis on weekends relative to diagnosis on weekdays for all-cause death among PE patients was still insignificant (adjusted HR: 0.76; 95% CI: 0.42–1.28). The most frequent cause of deaths was fatal PE in both groups among PE patients. The risks for recurrent VTE and major bleeding at 30 days were not significantly different between the 2 groups among PE patients nor DVT patients.

Conclusions: The VTE patients diagnosed on weekends presented with PE more frequently, and they showed more severe condition for PE, although the risks for short-term mortality were not significantly different between patients diagnosed on weekends and weekdays.



Kaplan-Meier curves for all-cause death