

# Venous Thromboembolism in Spontaneous Intracerebral Hemorrhage

Patients with [spontaneous intracerebral hemorrhage](#) (ICH) are predisposed to [Venous Thromboembolism](#) (VTE), such as [deep vein thrombosis](#) and [pulmonary embolism](#).

To evaluate, in a multicenter, retrospective cohort study, the rate of VTE complications in ICH patients during acute hospitalization, identify potential risk factors, and assess their association with functional outcome.

We retrospectively analyzed prospectively collected data from 19 centers and 41 sites that participated in the Ethnic/Racial Variations of Intracerebral Hemorrhage study, from August 2010 to February 2016. We compared ICH patients with VTE complications to those without VTE complications. Statistical analyses were performed to determine predictors of VTE complications and poor outcome (modified Rankin Scale  $\geq 4$ ) at discharge and 3-mo follow-up.

Of the 2902 ICH patients who were eligible for analysis, 87 (3.0%) had VTE complications: 57 (2.0%) had only deep vein thrombosis, 19 (0.7%) had only pulmonary embolism, and 11 (0.4%) had both. In the multivariable logistic regression analysis, a prior history of VTE (odds ratio [OR] = 6.8;  $P < .0001$ ), intubation (OR = 4.0;  $P < .0001$ ), and presence of IVH (OR = 1.8;  $P = .0157$ ) were independent predictors of VTE complications. After controlling for ICH volume and location, IVH, age, and presenting Glasgow Coma Scale, the occurrence of VTE complications was an independent predictor of poor outcome at discharge (OR = 2.9;  $P = .002$ ) and 3-mo follow-up (OR = 2.1;  $P = .02$ ).

Although VTE complications are uncommon after ICH, they are associated with significantly worse outcomes. Further studies will be needed to determine the optimal treatment regimen for the prevention and treatment of VTE complications in ICH patients <sup>1)</sup>.

<sup>1)</sup>

Ding D, Sekar P, Moomaw CJ, Comeau ME, James ML, Testai F, Flaherty ML, Vashkevich A, Worrall BB, Woo D, Osborne J. Venous Thromboembolism in Patients With Spontaneous Intracerebral Hemorrhage: A Multicenter Study. *Neurosurgery*. 2018 Jul 13. doi: 10.1093/neuros/nyy333. [Epub ahead of print] PubMed PMID: 30011018.

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