

Long-term Survival after Venous Thromboembolism: A Prospective Cohort Study

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Background: Little is known about long-term survival after the initial treatment of venous thromboembolism (VTE).

Aims: In a prospective cohort study, we aimed to assess the long-term mortality and key predictor variables relating to disease severity, treatment intensity, and comorbidities.

Methods: Between 1988 and 2018, 6'243 consecutive patients with previous VTE from a University outpatient unit were prospectively included and followed until December 2019; clinical characteristics, measures of disease severity, and treatment details were recorded. Dates of death were retrieved from the Swiss Central Compensation Office. Standardized mortality ratios (SMR) were computed using data from the Swiss Federal Statistics Office. Univariate and multivariate Cox proportional-hazard models were fitted to the data.

Results: Two-hundred and fifty-four deaths occurred over an observation period of 57'212 patient-years. Compared to the Swiss population, the SMR was 1.30 (95% confidence interval [CI] 1.14, 1.47; overall mortality rate: 4.44 per 1'000 patient-years). The following predictors were associated with increased mortality: Unprovoked VTE (hazard ratio [HR]: 5.06; 95% CI: 3.29, 7.77), transient triggering risk factors (HR: 3.46; 95% CI: 2.18, 5.48), previous VTE (HR 2.05; 95% CI: 1.60, 2.62), pulmonary embolism (HR: 1.45, 95% CI: 1.10, 1.89), permanent anticoagulant treatment (HR 3.14; 95% CI: 2.40, 4.12), prolonged anticoagulant treatment (7-24 months; HR 1.70; 95% CI: 1.16, 2.48), and cardiovascular comorbidities. Unprovoked VTE, previous VTE, permanent and prolonged anticoagulation remain independent risk factors after adjustment for age, sex, and comorbidities.

Conclusions: Survival after VTE was significantly reduced compared to the Swiss general population, especially in patients with more severe disease, cardiovascular comorbidities, and longer anticoagulant treatment. Close monitoring and reduced-intensity treatment schemes are potential targets to improve long-term care in patients with severe VTE.

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