

HISTORY OF CANCER IN VTE PATIENTS WITH AND WITHOUT HEREDITARY THROMBOPHILIA: A SINGLE CENTER COHORT STUDY

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Background and Aims. Hypercoagulability is a well-recognized feature of cancer and may play a role in tumor development and progression. Hereditary thrombophilia confers a lifelong predisposition to thrombosis, yet its relationship with cancer risk remains uncertain. This study aims to compare the prevalence of cancer among patients with venous thromboembolism (VTE) with and without hereditary thrombophilia.

Methods. Consecutive patients with a history of venous thromboembolism (VTE) who underwent hereditary thrombophilia testing were enrolled. Patients were classified into three groups: no thrombophilia, mild thrombophilia, and severe thrombophilia (n = 200 each). The primary outcome was a history of cancer, defined as any solid or hematological malignancy diagnosed at any time. Age at first VTE was used as age at inclusion. Prevalence ratios (PRs) for cancer were estimated using Poisson regression with a log link and robust standard errors, adjusted for age and sex. Incident post-VTE cancer was analyzed after excluding pre-VTE cancer cases, using Cox regression adjusted for age and sex.

Results. Cancer prevalence was 12.5% (25/200) in patients without thrombophilia, 14.0% (28/200) in those with mild thrombophilia, and 11.0% (22/200) in those with severe thrombophilia. Adjusted Poisson regression showed no association between thrombophilia status and overall cancer prevalence (mild vs no thrombophilia: PR 1.31, 95% CI 0.74–2.32, p = 0.362; severe vs no thrombophilia: PR 1.06, 95% CI 0.59–1.91, p = 0.839), while increasing age was independently associated with cancer (p = 0.001). Pre-VTE cancer prevalence was 9.0% (18/200) in patients without thrombophilia, 2.5% (5/200) in mild thrombophilia, and 6.5% (13/200) in severe thrombophilia. However, thrombophilia was not independently associated with pre-VTE cancer after adjustment for age and sex (overall p = 0.212). In sensitivity analyses based on thrombophilia subtypes, an overall association between subtype and pre-VTE cancer was observed (p = 0.041), mainly driven by protein C deficiency (PR 2.19 vs no thrombophilia; p = 0.032). Median age at cancer diagnosis was 64.5 [54.0–73.0] years in patients without thrombophilia, 61.5 [53.5–69.0] in mild thrombophilia, and 58.0 [47.0–66.8] in severe thrombophilia. Incident cancer occurred in 6.9% (39/564) over 5,722 person-years (0.68 per 100 person-years, 95% CI 0.47–0.90), with no association with thrombophilia in adjusted Cox regression, while age remained an independent risk factor.

Conclusions. In VTE patients, hereditary thrombophilia was not independently associated with overall cancer prevalence. Cancer risk was mainly driven by age. Subtype analyses suggested a possible signal for protein C deficiency and pre-VTE cancer, but this finding requires confirmation.

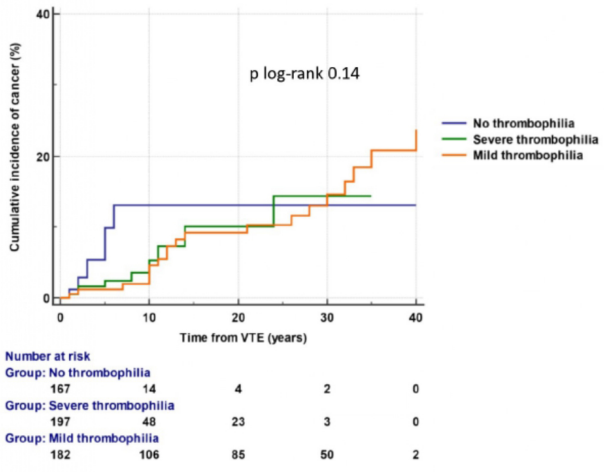


Figure 1. Cumulative incidence of cancer after index VTE according to hereditary thrombophilia status