

EPIDEMIOLOGY

RISK OF VENOUS THROMBOEMBOLISM IN PATIENTS WITH CANCER AND MIGRAINE: A COHORT ANALYSIS AMONG DANISH NATIONAL HEALTH SURVEY PARTICIPANTS

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Introduction. Although migraine is a risk factor for venous thromboembolism (VTE), previous studies do not account for confounding by lifestyle factors. It further remains unclear whether migraine interacts with cancer on the risk of VTE.

Aim. Examine the association between migraine and VTE after adjusting for lifestyle factors, and to examine the impact of cancer on this association.

Materials and Methods. We included adults (aged ≥18 years) participating in the Danish National Health Surveys in 2010, 2013, or 2017. Using Danish health registry data, migraine was identified by hospital-based diagnosis codes or by at least two migraine-specific medication prescriptions within 24 months before the index date. The outcome was a first-time hospital-based VTE diagnosis, identified using diagnosis codes from the Danish National Patient Registry. Incidence rates of VTE per 10,000 person-years were calculated, stratified by cancer and migraine status. Cox proportional hazards regression models were used to estimate hazard ratios (HRs) with sequential adjustment, including lifestyle

factors, and stratified by cancer status.

Results. Among 463,104 survey respondents, 12,118 (2.8%) had migraine at baseline. Baseline characteristics, including lifestyle factors, differed by migraine status. Overall incidence rates of first-time VTE varied by migraine status. Among individuals without cancer, the VTE incidence rate was 18.2 per 10,000 person-years in those with migraine and 18.9 in those without. Among individuals with cancer, the corresponding rates were 32.4 and 49.2. In the lifestyle-adjusted model, migraine was associated with VTE, with an HR of 1.16 (95% CI: 0.99–1.37) among individuals without cancer and 0.78 (95% CI: 0.46–1.33) among those with a cancer diagnosis. Negative additive interaction was suggested (interaction contrast -16.1 per 10,000 PY; 95% CI: -35.0–2.8; attributable proportion -50%).

Conclusions. In this population-based cohort analysis, migraine was not clearly associated with first-time VTE after adjustment for lifestyle factors. However, the VTE risk varied by cancer status, and negative additive interaction between migraine and cancer was suggested, although estimates were imprecise.

Table 1. Incidence rates and lifestyle-adjusted hazard ratios for first-time venous thromboembolism

	Without cancer		With cancer	
	With migraine (n = 12,118)	Without migraine (n = 422,414)	With migraine (n = 700)	Without migraine (n = 27,872)
VTE events	151	5,506	14	787
Person-years	83,003	2,914,635	4,321	160,050
Incidence rate per 10,000 PY	18.2	18.9	32.4	49.2
HR (95% CI)	1.16 (0.99–1.37)	1.00	0.78 (0.46–1.33)	1.00

Abbreviations: CI, confidence interval; HR, hazard ratio; PY, person-years; VTE, venous thromboembolism.