EPIDEMIOLOGY

CANCER MORTALITY AFTER INCIDENT VENOUS THROMBOEMBOLISM

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Introduction. Previous studies have shown poor prognosis in venous thromboembolism (VTE) patients with occult cancer (i.e., cancer<1year after VTE). The prognosis in VTE patients diagnosed with cancer >1year after VTE is less studied. Whether advances in management and treatment of both VTE and cancer during the last decades have contributed to improving survival in patients with occult cancer-related VTE remains unsettled.

Aims. To assess mortality in patients diagnosed with cancer ≤1 year and >1 year after a VTE compared with cancer patients without prior VTE and to explore whether these estimates changed during two time-periods (1994-2007 and 2008-2020).[b]Materials and Methods. A cohort of participants diagnosed with cancer (n= 15,457) was derived from the Tromsø4-7 and HUNT2-3 surveys with follow-up in the period 1994-2020. We estimated cumulative incidences and hazard ratios (HRs) with 95% confidence intervals (CIs) for all-cause mortality in patients with cancer ≤1 year (n=135) and >1 year after VTE (n=250) compared with cancer patients without prior VTE (n=15,072). Separate analyses were performed for the periods 1994-2007 and 2008-2020.

Results. The 1-year survival after cancer diagnosis was 56.7% and 66.6% among those with cancer ≤1 year and >1 year after VTE, and 78.8% in cancer patients without prior VTE. The corresponding 1-year age- and sex-adjusted HRs of mortality were 2.29 (95% CI: 1.76-2.98) and 1.24 (95% CI: 0.98-1.56) for cancer ≤1 year and >1 year after VTE, respectively. Adjustment for cancer type and stage substantially attenuated the mortality HR for patients diagnosed with cancer ≤1 year after VTE (HR 1.19, 95% CI: 0.90-1.55). The survival of these patients improved slightly from 1994-2007 to 2008-2020 and reflected the overall trend in improved survival among cancer patients (Figure 1).

Conclusions. Patients with cancer ≤1 year after VTE had >2-fold increased mortality risk, which was mainly driven by aggressive cancer types and advanced stage at cancer diagnosis. The survival of these patients improved slightly from 1994-2007 to 2008-2020. Recent advancements in the diagnostics and treatment of cancer, along with increased awareness of occult cancer in patients with VTE, might have improved the mortality risk in patients diagnosed with cancer ≤1 after incident VTE.

Figure 1. Two-year cumulative survival after cancer diagnosis in patients with cancer (without VTE) and occult cancer (cancer ≤1 year after VTE) according to time-periods 1994-2007 and 2008-2020.