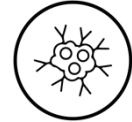


## 15. THE OCCURRENCE OF VENOUS THROMBOEMBOLISM AT PATIENTS UNDERGOING NEOADJUVANT CHEMOTHERAPY



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**Introduction.** Venous thromboembolism (VTE) is a common complication in cancer patients receiving adjuvant treatment, but its prevalence during neoadjuvant chemo-radiotherapy remains uncertain.

**Aim of study.** This systematic review was conducted to evaluate the frequency of venous thromboembolism (VTE) at patients with cancer who are undergoing neoadjuvant treatment.

**Methods and materials.** The review included 22 cohort studies with 6977 cancer patients, exploring MEDLINE, SCOPUS, EMBASE, PubMed, HINARI. The findings from the literature search were supplemented by reviewing the conference proceedings of the American Society of Clinical Oncology (2014-2020) and the International Society of Thrombosis and Haemostasis (2013-2018). The majority of cohorts focused on gastrointestinal cancer (78%).

**Results.** The analysis comprised twenty-two observational studies involving 6977 patients with cancer. Nineteen studies employed a retrospective design. Gastrointestinal cancer was the primary focus of twelve cohorts, constituting over two-thirds of the total study population ( $n = 5442$ , 78%). Among 6977 patients, 490 were diagnosed with at least one episode of venous thromboembolism (VTE) during neoadjuvant treatment, yielding a consolidated VTE incidence of 7% with no substantial between-study heterogeneity. The observed heterogeneity remained unexplained by the site of cancer or specific study design characteristics. Pulmonary embolism emerged as the predominant form of VTE, ranging from 20% to 92% across ten cohorts, with symptoms apparent in 24% to 98% of patients in twelve cohorts. Noteworthy is the observation that the highest VTE rates were found in individuals with bladder (11.4%) or esophageal (9.2%) cancer.

**Conclusion.** In summary, the analysis of 22 observational studies involving 6977 cancer patients revealed a consolidated venous thromboembolism (VTE) incidence of 7% during neoadjuvant treatment. Despite a focus on gastrointestinal cancer in 12 cohorts, there was no significant heterogeneity explained by cancer site or study design characteristics. Pulmonary embolism emerged as the predominant form of VTE, showing variability across cohorts. Notably, individuals with bladder (11.4%) or esophageal (9.2%) cancer exhibited the highest VTE rates. These findings emphasize the need for heightened awareness of VTE risk in specific cancer types during neoadjuvant treatment.