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**PO-20**

**Incidence of venous thromboembolism in men with prostate cancer and men without prostate cancer: a nationwide population-based cohort study in Sweden**

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**Introduction:** Venous thromboembolism (VTE), including deep vein thrombosis (DVT) and pulmonary embolism (PE), is a leading cause of death among cancer patients. Population-based data from the United Kingdom and Denmark suggest that the risk of VTE is 2.6 to 3-fold higher in men with prostate cancer than among men of similar age without cancer. To gain further knowledge in this field, there is a need to obtain comparable data from other countries.

**Aim:** To compare the incidence rate of VTE in men with prostate cancer and randomly selected age-matched men without prostate cancer from the Swedish general population.

**Materials and Methods:** We performed a population-based cohort study using linked data from the National Prostate Cancer, the Patient, and the Cause of Death Registers in Sweden. We identified all men with a first diagnosis of prostate cancer and no previous VTE between 2007 and 2016 (N=92,105) and matched each to five randomly selected men free of prostate cancer and of the same age and county of residence (N=466,241). Men were followed to identify first incident VTE cases. Crude cumulative incidences and incidence rates (IRs) per 1000 person-years with 95% confidence intervals (CIs) were calculated, along with hazard ratios (HRs) comparing the risk of VTE in men with and without prostate cancer, adjusted for confounders.

**Results:** A total of 2955 men with and 9774 men without prostate cancer experienced a VTE. Cumulative incidences are shown in the Figure. The cumulative incidence ratio (men with vs. without prostate cancer) decreased from 2.53 (95% CI: 2.26–2.83) at 6 months to 1.59 (95% CI: 1.52–1.67) at 5 years' follow-up. Incidence rates per 1000 person-years (95% CIs) in men with vs. men without prostate cancer, respectively, were 6.54 (6.31–6.78) and 4.27 (4.18–4.35) for VTE, 3.12 (2.96–3.28) and 2.02 (1.96–2.08) for DVT, and 3.38 (3.22–3.55) and 2.22 (2.16–2.80) for PE. Adjustment for patient variables made minimal difference to the HRs; crude and adjusted HRs (95% CI) were 1.54 (1.45–1.64) and 1.48 (1.39–1.57) for DVT, and 1.52 (1.44–1.61) and 1.47 (1.39–1.56) for PE.

**Conclusions:** Swedish men with prostate cancer have a mean 50% increased rate of VTE during 5 years' follow-up, compared to men without prostate cancer of the same age. While this is lower than previous estimates from European cohorts, it still indicates a marked increase in VTE risk to be noted by treating physicians.

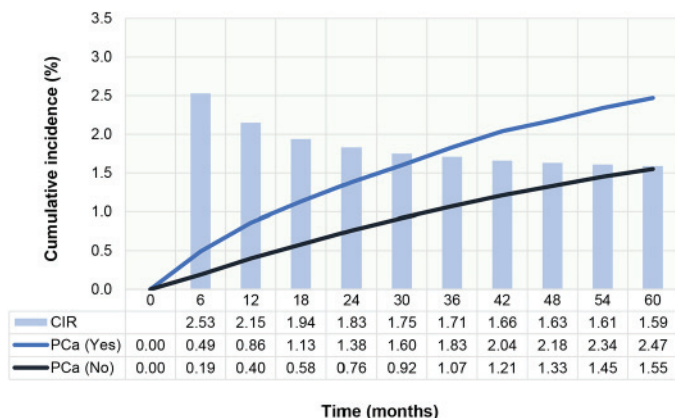


Fig. 1 (abstract PO-20).

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**PO-21**

**Incidence of venous thromboembolism events in outpatients with cancer and COVID-19.**

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**Introduction:** Although cancer and anti-cancer therapy are well-known risk factors for venous thromboembolism (VTE), the risk of VTE in COVID-19 outpatients with cancer remains unclear. Recent data suggest an increased risk of VTE in hospitalized patients, but there are limited data regarding the risk in ambulatory cancer patients.

**Aim:** Our aim was to determine the VTE incidence and outcomes of cancer patients diagnosed with COVID-19 that were treated in outpatient setting.

**Materials and Methods:** We developed a retrospective cohort study to investigate the incidence of VTE among COVID-19 adult patients and active or previous history of cancer. Our cohort included cancer patients from the Oncology Department of Gregorio Marañón General University Hospital who were diagnosed with COVID-19 from March to June 2020, demonstrated by RT-PCR and/or serology testing for SARS-CoV-2 IgM/IgG, and received an ambulatory management. We collected clinical data from the medical record of each patient, including comorbidities, cancer and anti-cancer therapy characteristics, presence of additional risk factors for VTE or previous VTE or anticoagulant therapy, and COVID-19 course, treatment and thromboprophylaxis. Patients were closely followed up at the medical oncology outpatient clinic after discharge.

**Results:** Thirty-nine consecutive outpatients with cancer and COVID-19 were included. Median age was 61 years (interquartile range [IR] 50-67 years). The clinical data collected are included in Table 1. Thirty-two patients (82.1%) had an active cancer and 26 (66.6%) had received anti-cancer treatment in the previous 3 months. Seventeen patients (43.6%) were stage IV at COVID-19 diagnosis. The majority were ECOG 0-1 (33 patients, 84.6%). Twenty-seven (69.2%) developed COVID-19 symptoms, being fever the most common symptom (21 patients, 77.8%) of which included fever. One third (13 patients, 33.3%) developed pneumonia. Most patients (29 patients, 74.4%) were not receiving anticoagulation at COVID diagnosis, and only 2 patients were initiated on thromboprophylaxis after discharged. According to Khorana risk assessment model 25 patients (71.4%) presented low, 9 intermediate (25.7%) and 1 high (1, 2.9%) risk. No venous or arterial thromboembolism events were reported after a median follow-up of 127 days (IR 102-187). Mortality rate was 0%.

**Conclusions:** In this cohort study of cancer patients and COVID-19 treated in ambulatory setting, there were no thrombotic events (neither venous nor arterial) in patients who received an ambulatory care.

**Table 1** (abstract PO-21)  
Clinical characteristics

	All patients (n = 39)		All patients (n = 39)
Sex – no. (%)		Recent anti-cancer therapy (previous 3 months) – no. (%)	26 (66.6)
Male	19 (48.7)	Clinical trial	3(11.5)
Female	20 (51.3)	Chemotherapy	8 (30.7)
Age – median (IQR)	61 (50-67)	Immunotherapy	3 (11.5)
Comorbidities – no. (%)		Targeted therapy	13 (50)
Hypertension	15 (38.5)	Hormonal therapy	12 (46)
Diabetes mellitus	4 (10.3)	Radiotherapy	3(11.5)
Dyslipidaemia	10 (25.6)	Surgery	4 (15.4)
Obesity (BMI > 30)	5 (12.8)	G-CSF (previous 15 days) – no. (%)	3 (7.7)
Myocardial infarction	2 (5.1)	Intention of treatment – no. (%)	
Congestive heart failure	2 (5.1)	Curative	20 (51.3)
Peripheral vascular disease	1 (2.6)	Palliative	17 (43.6)
COPD	3 (7.7)	Unknown	2 (5.1)
Chronic kidney disease	4 (10.3)	SARS-CoV-2 test – no. (%)	
Hepatopathy	4 (10.3)	Positive SARS-CoV-2 PCR	28/36 (77.8)
Immune disease	0 (0)	IgG detected	13/24 (54.1)
Primary cancer type – no. (%)		IgM detected	2/14 (14.3)
Breast	12 (30.8)	COVID19-related symptoms – no. (%)	27 (69.2)
Lung	6 (15.4)	Fever	21 (77.8)
Colorrectal	6 (15.4)	COVID-19 incidental diagnosis – no. (%)	14/38 (36.8)
Prostatic	3 (7.7)	Radiologic pneumonia – no. (%)	13/37 (35.1)
Renal	3 (7.7)	Anti-COVID19 therapy – no. (%)	13 (33.3)
Ovarian	2 (5.1)	Hydroxychloroquine	10 (25.6)
Sarcoma	2 (5.1)	Ritonavir/lopinavir	3 (7.6)
Pancreas	1 (2.6)	Steroids	0
Stomach	1 (2.6)	Other	0
Bladder	1 (2.6)	Laboratory findings – median (IQR)	
Neuroendocrine tumor	1 (2.6)	D dimer (µg/mL)	118 (59-252)
Other	1 (2.6)	APTT (s)	29.4 (28.4-32.4)
TNM staging at diagnose – no. (%)		CRP (mg/dL)	0.5 (0.4-4.45)
IV	17 (43.6)	Khorana risk score at COVID-19 diagnosis – no. (%)	
III	10 (25.6)	Low-risk (0 points)	25 (64.1)
II	4 (10.3)	Intermediate-risk (1-2 points)	9 (2.3)
I	7 (17.9)	High-risk (3 points)	1 (2.6)
Unknown	1 (2.6)	Unknown	4 (10.3)
Clinical staging at COVID-19 diagnose – no. (%)		History of VTE – no. (%)	1 (2.6)
Complete remission	14 (39.5)	Pre-admission anticoagulation – no. (%)	8 (20.5)
Localized	1 (2.6)	Type of drug	
Locally advanced	5 (12.8)	LMWH	4 (50)
Metastatic	17 (43.6)	Anti-Vitamin K	3 (37.5)
Unknown	2 (5.1)	DOAC	1 (12.5)
Cancer status <sup>1</sup> – no. (%)		Dosing	
Active cancer	32 (82.1)	Therapeutic	7 (87.5)
History of cancer	3 (7.7)	Prophylactic	1 (12.5)
Complete remission	3 (7.7)	Thromboprophylaxis at diagnosis of COVID-19 – no. (%)	2/31 (6.5)
Unknown	1 (2.6)	Enoxaparin 40 mg /24h	2 (100)
ECOG – no. (%)		Other	0 (0)
0	22 (56.4)	Previous hormonal treatment <sup>2</sup> – no. (%)	5/35 (14.3)
1	11 (28.2)	Erythropoietin stimulating agents – no. (%)	0 (0)
2	1 (2.6)	Central venous catheter – no. (%)	13 (33.3)
Unknown	5 (12.8)	Port-a-cath	12 (92.3)
		PICC	1 (7.7)

COPD, chronic obstructive pulmonary disease; G-CSF, granulocyte colonies stimulating factor; LMWH, low molecular weight heparins; DOAC, direct oral anticoagulant; PICC, peripherally inserted central catheter. <sup>1</sup>Cancer status was classified as: Active cancer defined as diagnosis of cancer within six months before the study inclusion, or receiving treatment for cancer at the time of inclusion or any treatment for cancer during 6 months prior to randomization, or recurrent locally advanced or metastatic cancer. History of cancer defined as last anti-cancer therapy or evidence of cancer more than 6 months ago but during the previous 24 months. Complete remission defined as no evidence of cancer neither anti-cancer therapy in the last 24 months. <sup>2</sup>We included any hormonal treatment (oral contraceptives, hormone replacement therapy, etc) received before starting anti-cancer therapy.

**PO-22****Venous thromboembolism in cancer patients – data from Regional Centre for transfusion medicine Shtip**

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**Introduction:** Venous thromboembolism (VTE) is the second leading cause of death and a major cause of morbidity in patients with cancer. Thrombosis of deep vein system (DVD) in lower extremities and the syndrome of migratory superficial thrombophlebitis is the most common form of VTE in cancer patients. All cancer patients should have an assessment of their risk of VTE recurrence as well as their risk of bleeding on anticoagulation.

**Aim:** To show correlation between appearance of VTE and cancer disease in patients who were treated in our ambulance, in Regional center for transfusion medicine Shtip. This correlation between VTE and cancer may have diagnostic, prognostic and therapeutic significance.

**Materials and Methods:** In the past 5 years (from 2015 to 2020), 36 patients with DVD and migratory superficial thrombosis were diagnosed and treated in our Regional center. Patients were between 47 and 76 years old, from which 17 man and 19 woman. Ca PVU were 7 woman, Ca colonis 2 man and 2 woman, Ca ovarii 2 woman, Ca prostatic 8 man, Ca pulmonum 6 man, Tu cerebri (astrocytoma) 1 man, 2 patients with Ca pulmonum and 1 patient with Ca recti. In all these patients were made basic hemostasis tests (fibrinogen, platelet count, PT, aPTT, TT, D-Dimer test) and was prescribed therapy with