Prevalence and incidence of femoral vein deep vein thrombosis in hospice admissions due to advanced cancer

White C¹, Swan F², Allgar V³, Napier E⁴, Nelson A⁵, Noble SIR⁵, Watson M⁶, Johnson MJ².

¹Northern Ireland Hospice; ²University of Hull; ³University of York; ⁴Belfast NHS Trust; ⁵University of Cardiff; ⁶Hospice UK.

BACKGROUND

- Venous thromboembolism (VTE) (deep venous thrombosis [DVT] and pulmonary embolism [PE])-commonest preventable cause of hospital death.
- Guidelines recommend pharmacological thromboprophylaxis for all cancer patients in hospital with acute illness.
- Globally, few Specialist Palliative Care Units (SPCUs) practice routine thromboprophylaxis.
- Provision of thromboprophylaxis for patients receiving palliative care for advanced cancer therefore may be determined by place of admission and not clinical risk.
- It is unknown if current practice represents over-treatment (hospital) or under-treatment (SPCU).

AIMS AND OBJECTIVES

- Primary objective: To estimate the prevalence of clinically relevant VTE in people with advanced, incurable cancer.
- Secondary objectives: To estimate incidence of DVT during admission and evaluate clinical outcomes (symptoms/signs of VTE, bleeding, survival).

METHODS

DESIGN: Prospective longitudinal observational study

PARTICIPANTS: consecutive adults with cancer admitted to 5 SPCUs in England, Wales and N. Ireland; able to give written (or consultee) consent, no physical bar to femoral vein ultrasound; clinician estimated prognosis of ≥ 5 days, sufficient English.

ASSESSMENTS at baseline and then weekly for up to 3 weeks (or until discharge or death):

- bedside femoral and popliteal vein ultrasound examination- digitally recorded and reviewed by the study radiologist (EN)
- Australian-modified Karnofsky Performance Scale (AKPS)
- clinical examination for signs/symptoms of VTE
- bleeding episodes
- medication record including anticoagulation
- survival (using clinical record data)

SAMPLE SIZE of 217 needed to estimate the prevalence of proximal lower limb DVT (5% precision; 95% CI)

ANALYSIS: Multivariable logistic regression using backward selection with a retention criterion of p-value of less than 0.20 was used. Adjusted odds ratios with 95% CIs. Kaplan Meier curve used to compare survival.

RESULTS

Consort diagram

RESULTS

PARTICIPANTS: N=343 mean age 68.2 yrs (SD 12.8, range 25-102); men 52%; AKPS mean 49 (SD 16.6, range 20-90%)

- Primary tumour- lung (20%), colorectal (16%), HPB (9%), upper GI (9%), breast and prostate (both 8%)
- 83% had metastatic disease, 81% comorbidities
- 77 (22%) had a history of VTE with 36 (10%) a history of DVT and 53 (16%) of PE.
- 82 (24%) were on thromboprophylaxis, 40 (12%) on therapeutic anticoagulation on admission.
- 194 participants completed 1 week, 81 - 2 weeks, 31 - 3 weeks

PREVALENCE OF FEMORAL VEIN DVT - Of 273/343 evaluable scans (“unable to evaluate” (52), data missing (18)), 92 (**34%, CI 28-40%**) showed DVT. A sensitivity analysis excluding 3 months of early scans for learning curve of study nurses showed DVT in 64/232 scans (**28%, CI 22%-34%**).

PREDICTORS OF DVT -see Table 1. Thromboprophylaxis use (OR 1.51; 0.84-2.71; p = 0.173) and serum albumin levels were not associated with DVT (0.98; 0.93 to 1.03; p=0.430)

Table 1. Multivariable logistic regression analysis

	OR (95% CI)	p-value
Past medical history DVT	3.00 (1.28, 7.00)	0.011
Past medical history VTE	2.06 (1.16, 3.69)	0.014
Bedbound last 12 weeks	2.66 (1.38, 5.10)	0.003
Lower limb oedema	2.08 (1.20, 3.60)	0.009

SURVIVAL: mean average 44 days (95% CIs 37-51). The presence of DVT was not related to survival (p=0.449) (Fig.1)

Figure 1. Survival by DVT

INCIDENCE OF DVT DURING ADMISSION- of those with a repeat scan (167/200 at week 1, 72/86 at week 2, 28/33 at week 3), and with a “no DVT” scan on admission, only 4 patients had a DVT identified during follow up. A further 8 had a DVT identified but no evaluable scan on admission. Hence, the total number of patients identified as having a DVT during the SPCU stay was 104/290 (36%), (95% CI: 30%-42%).

CONCLUSIONS

- Femoral vein DVTs are more common (approx. 28%) than previously estimated in patients with advanced cancer admitted to a SPCU.
- DVT had no impact on survival or symptoms apart from leg oedema.
- Thromboprophylaxis use was not associated with fewer DVTs.
- Very few developed a DVT during their SPCU admission.
- DVT risk assessment on SPCU admission could simply use AKPS as those with a poor performance status unlikely to improve seem unlikely to benefit from thromboprophylaxis. Those more ambulant may benefit from a “hospital” approach.
- These data do not support routine thromboprophylaxis for people with advanced cancer admitted to a SPCU.

This presentation presents independent research funded by the NIHR under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number PB-PG-0614-34007). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.