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Patients Experience and Preference Regarding Subcutaneous Venous Thromboembolic Prophylaxis Following Robotic Assisted Radical Cystectomy

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Abstract

Aim

The European Association of Urology recommend venous thromboembolic (VTE) prophylaxis for 28 days following radical cystectomy (RC). The aim of this study was to assess patients experience with VTE prophylaxis.

Methods

A review was performed of the last 100 patients who underwent RC at our centre.

Results

80 patients responded, 59 (73.8%) patients self-administered, 16 (20%) had it administered by a family member and 5 (6.3%) required a daily visit by a district nurse. 22 (27.5%) patients reported mild pain, 18 (22.5%) moderate pain while 9 (11.3%) reported severe pain. 33 (41.3%) patients described some bruising. 4 (5%) patients reported haematomas and 3 (3.8%) skin irritation. 4 (5%) patients described difficulty with injecting. 69 (86.3%) patients reported they would prefer an oral agent if possible. No patient developed a VTE.

Conclusion

Patients who receive extended VTE would prefer an oral agent if possible.

Introduction

The incidence of venous thromboembolism (VTE) following radical cystectomy (RC) is reported to be up to 17% (open cystectomy 2.9–11.6% and robotic assisted radical cystectomy (RARC) 2.6–10.3%)[1]. The European Association of Urology recommends 28 days VTE prophylaxis following RC[2]. The current standard is subcutaneous low molecular weight heparin (LMWH).

There have been concerns regarding patient compliance and physician adherence with the extended regimen[3]. Data from orthopaedic literature suggest that extended VTE prophylaxis with direct oral anticoagulants (DOACs) may be as effective in VTE prevention[4]. The aim of this study was to assess patients experience and preference regarding subcutaneous VTE prophylaxis following RARC.

Methods

A retrospective review was performed of the last 100 patients who underwent RARC. All patients received dalteparin post operatively commencing the night of the procedure and continued for 28 days. Patients are managed according to an enhanced recovery program which emphasises early mobilisation[5].

Results

80 patients agreed to take part in our survey. The clinical and pathological characteristics of the cohort are detailed in Table 1.

n=	**80**
Median Age, years (range)	72 (48-87)
Sex (%)	
Male	57 (71.3)
Female	23 (28.7)
Histological subtype	
Urothelial Cancer	70 (87.5)
Variant	10 (12.5)
Indication for surgery	
Non muscle invasive disease	35 (43.8)
Muscle invasive disease	45 (56.2)
Pathological Stage	
T1	29 (36.3)
T2	31 (38.8)
T3	14 (17.5)
T4	6 (7.5)
Nodal Status	
N0	75 (93.8)
N1	5 (6.2)
Neo-adjuvant chemotherapy	24 (30)
Median pre-operative Haemoglobin, g/L (range)	130 (81-163)
Median operative time, mins (range)	320 (200-500)
Median blood loss, mls (range)	200 (50-800)

Table 1: Patient demographics and histopathological details of patients who underwent robotic assisted radical cystectomy.

59 (73.8%) patients self-administered, 16 (20%) had it administered by a family member and five (6.3%) required a daily visit by a district nurse. 31 (38.9%) patients reported no pain over the course, 22 (27.5%) mild pain, 18 (22.5%) moderate pain while 9 (11.3%) reported severe pain. 33 (41.3%) patients described some degree of bruising. 4 (5%) patients reported haematomas and three (3.8%) skin irritation. Four (5%) patients described difficulty with injecting. No patient reported stopping dalteparin injections early.

69 (86.3%) patients reported they would prefer an oral agent if possible.

No patient developed a thrombo-embolic event by 90 days. No patient was readmitted with a haemorrhagic event.

Discussion

Our study demonstrates no issue with compliance with extended VTE prophylaxis following RARC. There were also no significant complications associated with extended VTE prophylaxis. Despite this the majority of patients in our cohort would prefer an oral alternative if possible.

Contrary to our findings, numerous studies have demonstrated that patient compliance can be an issue[3,6]. Marchocki et al, reported on 62% of patients completed their 28-day regimen[3]. Furthermore, physician adherence to prescribing extended regimens needs to be improved, Bergqvist demonstrated only 80% of over 3000 high risk orthopaedic patients received the appropriate prescription for extended VTE prophylaxis in a multi-centre registry across 17 European countries[6].

The concern regarding extended VTE prophylaxis is the increased risk of bleeding. One of the advantages of RARC is less blood loss (200mls in our series)- the risk of a secondary haemorrhage is low (no patient was readmitted with a haemorrhage in our series). In a review of over 400 open RC, Pariser et al, demonstrated no increase in bleeding events or transfusion rates following the introduction of an extended VTE regimen[7].

The use of an oral agent would be preferable for patients- avoiding the need to self-inject. Several randomized controlled trials in the orthopaedic literature have compared the use of direct oral anticoagulants (DOACs), factor Xa inhibitors such as apixaban to LMWH. The ADVANCE-2 trial compared Apixaban and Enoxaparin VTE prophylaxis following knee replacement. Apixaban 2.5 mg twice daily, starting on the morning after total knee replacement, offers a convenient and more effective orally administered alternative to 40 mg per day enoxaparin, without increased bleeding[8].In the ADVANCE-3 trial 5,407 patients were randomized similarly for 35 days after hip replacement. Thromboprophylaxis with apixaban, as compared with enoxaparin, was associated with lower rates of venous thromboembolism (1.4% vs 3.9%, $p<0.001$), without increased bleeding[9]. Furthermore, similar to LMWH no therapeutic monitoring is required with DOACs.

The current 2021 EAU guidelines for radical cystectomy suggest pharmacological prophylaxis such as LMWH- there is a slight discrepancy with the 2020 EAU VTE guidelines which suggest alternate prophylaxis regimens can be used such as DOACs [2]. Despite this LMWH is standard practice.

There is also an economic advantage to the use of DOACs instead of LMWH[10].

Although no serious adverse events were reported with 28 days of dalteparin use following radical cystectomy, the majority of patients would prefer an oral alternative.

Ethical Approval:
The study was approved by the ethical committee at the Royal Surrey (RS2021-1252).

Declaration of Conflicts of Interest:
There are no conflicts of interest to declare.

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