Inpatient VTE referrals Belfast Trust

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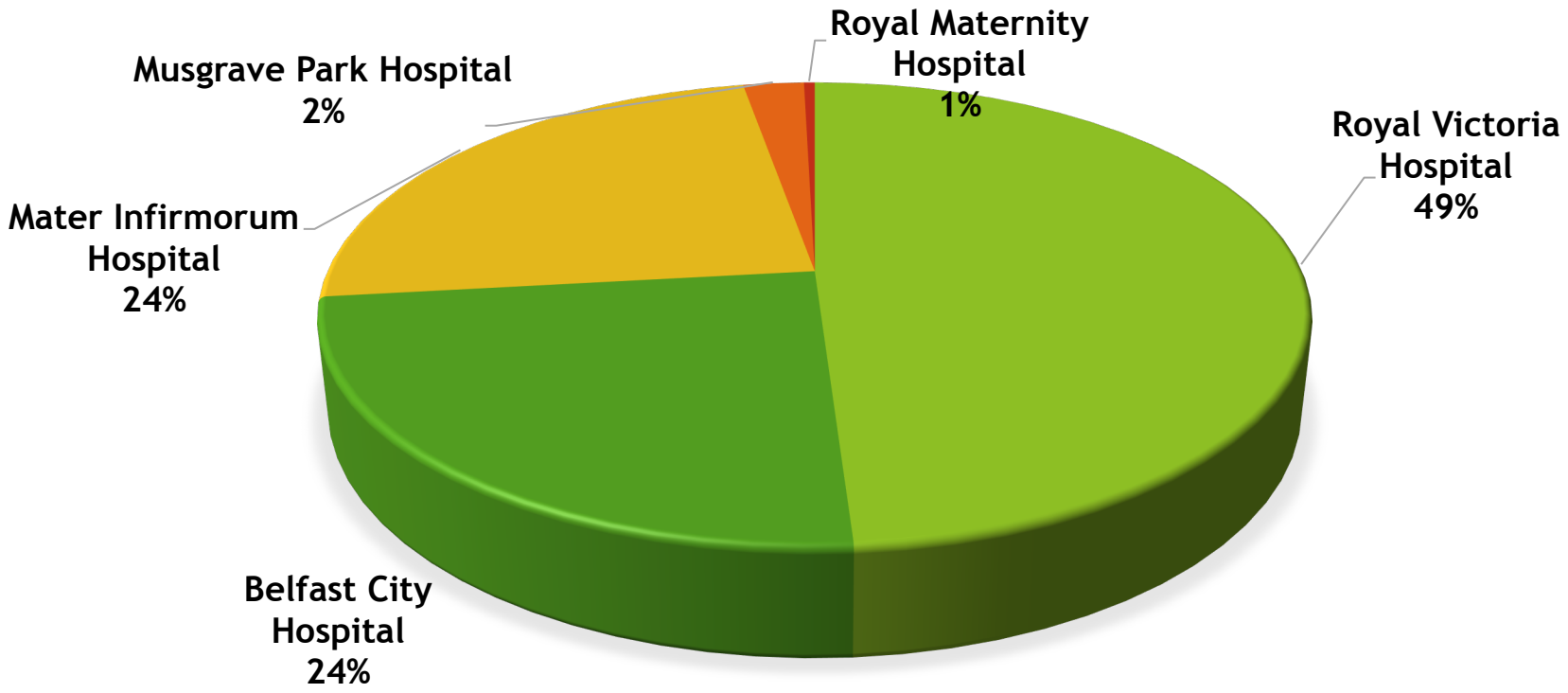
Background: VTE in Belfast Trust

- Serves local population of 350,000 (plus regional services across NI)
- Approx. 600 VTE diagnosed a year (excluding superficial thrombophlebitis)
- Half DVT/ Half PE
- Plus 100-150 cases of superficial thrombophlebitis each year

Background: 5 Hospital Sites



Background: **Outpatient Management of VTE**

- 40% of all patients diagnosed with acute VTE are managed as outpatient
- The majority of these attend the **Nurse Led VTE clinic** at Belfast City Hospital

Background: **Nurse Led VTE Clinic**

- Patients suitable for outpatient management are referred directly from the emergency departments
- VTE nurses have contact with patients at least 4 times over 4-6 week period
- The provide investigation, treatment, education, anticoagulant counselling, compression hosiery, arrange follow-up

Background: **Inpatients with VTE**

- 25% of acute VTE is diagnosed in patients who are already inpatients for another reason
- 35% of patients acute VTE are admitted for management
- Overall 60% of patients managed as inpatients

Preparation for commencing Inpatient Review Service

- Thrombosis inpatient VTE rounds at Kings College London- a model of practice
- Snapshot audit of Inpatient VTE management in BHSCT – to identify any potential areas of improvement

Preparation: Potential areas for improvement

Main Observations from 6 week Snapshot Audit 2016:

- Prescribing: doses for direct oral anticoagulants
- Duration of treatment: In some cases no duration for anticoagulant given on discharge letter and no follow-up arranged
- Choice of anticoagulants
- Renal impairment not always considered with dosing
- Cessation/Review of concurrent antiplatelet medication

Preparation: Aims

- Offer support to clinical teams looking after patients with VTE in a variety of wards and settings across the trust
- Enhance Patient Safety especially anticoagulant prescribing
- Extending the approach of the outpatient VTE clinic could help to standardise management
- Provide patients (And GPs) with clear management plans on discharge, including duration of treatment

January 2017 VTE Inpatient Review Service started

- Memo emailed to all consultants in relevant clinical areas across trust
- Included in junior doctor induction Information
- Email as point of contact for referrals: VTEinpatients@belfasttrust.hscni.net
- Referrals accepted for all inpatients diagnosed with acute VTE of any site (including unusual sites such as intrabdominal thrombosis)
- Aim to see within 2 working days (most seen same day or day after referral)

Aspects of Inpatient Reviews: **Diagnosis**

Diagnosis reviewed. Questions to ask:

- Is the VTE acute?
- Interpretation of radiology report
- Proximal or distal or superficial?
- Iliac vein thrombosis – discussed with vascular?
- Provoked or unprovoked?

Aspects of Inpatient Reviews: **Diagnosis**

Example case: Diagnosis

- Patient admitted with ?DVT and US Doppler report says “Thrombus in superficial femoral vein” – ward doctor wondering whether superficial or deep thrombosis – implications for duration/intensity of anticoagulation

Aspects of Inpatient Reviews: Diagnosis

Example case: Provoked vs Unprovoked

- Review of patient thought to have unprovoked DVT- denied provoking factors on questioning. Review of electronic care record shows recent admission 3 weeks ago in another trust with leg cellulitis with associated reduced mobility – provoked event.

Aspects of Inpatient Reviews: Hospital Acquired Thrombosis (HAT)

- 50% of VTE in BHSCT is hospital acquired
- Important to highlight to emphasise importance of VTE risk assessment
- Ideally VTE reviews will be coupled with root cause analysis of HAT in future

Aspects of Inpatient Reviews: **Further investigations required?**

- Basic blood tests including liver function, renal function, platelets should always be checked before commencing anticoagulation

Aspects of Inpatient Reviews: **Further investigations required?**

NICE guidance for unprovoked VTE:

Offer all patients diagnosed with unprovoked DVT or PE who are not already known to have cancer the following investigations for cancer:

a physical examination (guided by the patient's full history) ***and***

a chest X-ray ***and***

blood tests (full blood count, serum calcium and liver function tests) ***and***

urinalysis. ***[2012]***

1.5.2 Consider further investigations for cancer with an abdomino-pelvic CT scan (and a mammogram for women) in all patients aged over 40 years with a first unprovoked DVT or PE who do not have signs or symptoms of cancer based on initial investigation (see recommendation 1.5.1). ***[2012]***

Aspects of Inpatient Reviews: **Further investigations required?**

Is there suspicion of a prothrombotic disease or state (especially if recurrence or progression despite treatment):

- malignancy, pregnancy, heparin induced thrombocytopenia, vasculitis, antiphospholipid syndrome, myeloproliferative disorder, myeloma, PNH, hyperhomocysteinaemia etc.

Aspects of Inpatient Reviews: **Further investigations required?**

Example case: **Other causes**

- unprovoked PE in a patient with persistently elevated platelets in absence of iron deficiency, infection, inflammation
- JAK2 mutation positive, patient followed up by myeloproliferative clinic

Aspects of Inpatient Reviews: **Anticoagulation**

- Important basics – liver function, renal function, weight/BMI, interacting medications, different loading regimens for DOACs
- DOAC licencing/trial exclusions – post-thrombolysis, upper limb thrombosis, thrombosis in unusual sites, antiphospholipid syndrome, pregnancy, breast-feeding
- Duration: should be clear on discharge and if not decided then follow-up should be arranged

Aspects of Inpatient Reviews: **Anticoagulation**

- Is the patient on an antiplatelet or NSAID? – does it need to continue while on anticoagulation
- Is treatment indicated??

Aspects of Inpatient Reviews: **Anticoagulation**

Example case: **Antiplatelets**

- Patient with provoked DVT after fracture on commenced on DOAC. Also on aspirin- not stopped
- Indication for aspirin was hypertension/Type 2 Diabetes – advised to hold aspirin whilst on DOAC as bleeding risk increased

Aspects of Inpatient Reviews: **Anticoagulation**

Example case: **Is anticoagulation needed??**

- Patient admitted with severe left leg pain and swelling and found to have below knee DVT. Symptoms worsening with anticoagulation
- Also has large haematoma in left thigh likely due to taking NSAIDs on top of dual antiplatelet therapy
- Advised to manage distal DVT conservatively with serial monitoring and hold anticoagulation

Aspects of Inpatient Reviews: **Other Considerations**

- Females of child bearing potential – advice on avoidance of combined oral contraceptives, VTE risk assessment in pregnancy in future, HRT
- Vascular referral for Iliac vein thrombosis
- Air travel
- Graduated elastic compression stockings for DVT symptoms
- Surgery – consideration of IVC filter
- Thrombocytopenia in patients with malignancy

Aspects of Inpatient Reviews: **Other Considerations**

Example Case: IVC filter

- patient with gynaecological malignancy found to have acute DVT on day of admission for radical surgery – IVC filter recommended as surgery could not be delayed

Example Case: low platelets

- patient on treatment for myeloma, renal impairment and falling platelet Advice given on monitoring and dosing of LMWH in line with BHSCT guidelines on management of VTE.

Aspects of Inpatient Reviews: Relaying Advice

- Patient is seen to obtain history
- Another opportunity to explain diagnosis and treatment and for patient ask questions
- Advice relayed to medical staff on ward and recorded in notes
- Prescribing and anticoagulant counselling carried out by ward staff/admitting team
- Outpatient follow-up in some cases but usually not required if treatment plan fully established

Inpatient VTE reviews: **Outcome after 1 year**

- Estimated 50% of inpatients with acute VTE reviewed
- Often no advice required on top of existing management plan
- Simple checks are most important e.g. history, medication review etc.
- Management influenced and changed in some cases – usually simple observations of renal function, duration of treatment, provoked vs. unprovoked, antiplatelets etc.
- Clear management plan and duration of treatment provided
- Fall in overall percentage of inpatients with no clear duration and no follow-up on discharge after VTE reviews begin (9% down from 19%)

Conclusions

1. VTE is not a haematological disorder
2. VTE is encountered and managed by a range of medical and surgical specialties
3. Acute VTE is diagnosed daily across the trust but the patients are looked after in a variety of wards and settings across the trust
4. Patient safety issues include **prevention**, **treatment** to prevent recurrence/progression/complications and **anticoagulant safety**
5. Extending the approach of the outpatient VTE clinic to offer support for wards managing inpatients with VTE has advantages and helps to standardise management