2024 RBWH CANCER CARE SERVICES PRECEPTORSHIP FOR GENERAL PRACTITIONERS

Common questions in the management of DVT/PE

Dr Nick Weber

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Metro North Health | Queensland Government

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Common questions in the management of DVT/PE

Nick Weber
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Metro North Health | Queensland Government

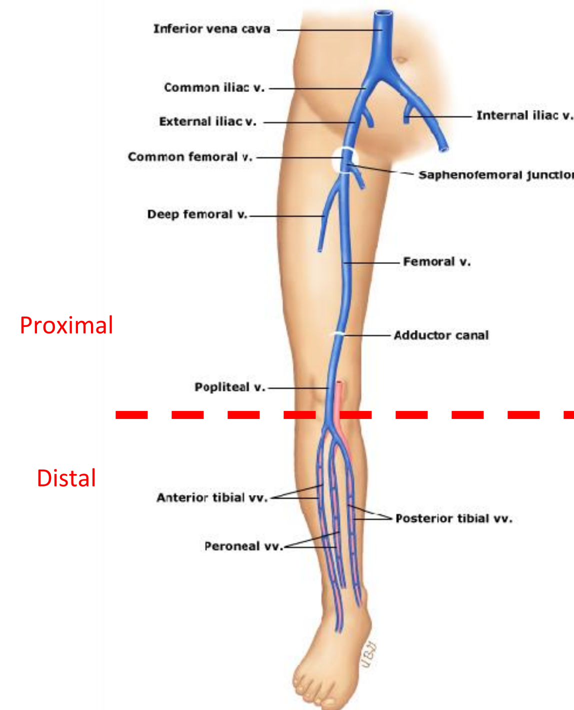
Key issues

1. Diagnosing and defining VTE
2. Role of thrombophilia testing
3. Choice and duration of anticoagulation
4. Managing bleeding risk on anticoagulation
5. Anticoagulation failure/recurrent VTE

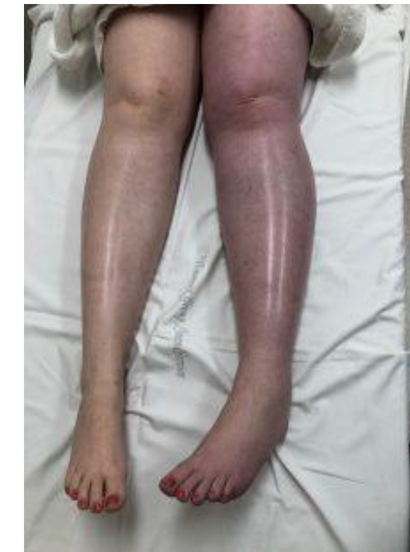
Diagnosing and defining VTE

Suspect and confirm diagnosis → Deep vs superficial / Proximal vs distal → Assess severity / Provoking factors

- Pre-test probability
  - Wells score (DVT)
  - Geneva score (PE)
  - D-dimer
- Intermediate-high pre-test probability, OR positive d-dimer:
  - Compression USS
  - CTPA
  - V/Q (CKD, pregnancy)



Massive DVT:
- Severe limb pain
- Limb ischaemia
- Phlegmasia cerulea dolens



Assessing severity: PE

Massive PE: SBP <90mmHg

Submassive PE: RV dysfunction without haemodynamic compromise

= candidates for thrombolysis

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sPESI criteria	Points
Age >80 years	1
History of cancer	1
Chronic cardiopulmonary disease	1
Systolic blood pressure <100 mmHg	1
Heart rate ≥110 b.p.m.	1
Arterial oxygen saturation <90%	1

The sPESI score is the sum of the assigned points for each criterion. If the sPESI score is 0 points, i.e. the patient classified as low 30-day risk of death, patient qualification is home treatment. If the sPESI score is >0, i.e. the patient classified as high 30-day risk of death, patient qualification is in-hospital treatment.
sPESI, simplified Pulmonary Embolism Severity Index.

Score	Risk group	30 day mortality
0	Low	1.1%
≥1	High	8.9%

Arch Intern Med 2010 Aug 9;170(15):1383-9.

Risk factors

Transient	Persistent
Major surgery Caesarean section	Active cancer
Immobilisation due to medical illness or trauma	Inflammatory bowel disease Nephrotic syndrome
Pregnancy/post-partum Oestrogen therapy	Antiphospholipid syndrome PNH JAK2+ MPN
	Male sex
	Inherited thrombophilia

Primary Reason for Referral

Thank you for urgently seeing this patient, who is a known case of Factor V Leiden heterozygote with a past medical history of DVT and PE. Following left ankle surgery 6 weeks ago, he was on Clexane but stopped taking it 10 days ago. He has since developed pleuritic chest pain, and a CTPA has revealed multiple bilateral non-occlusive pulmonary emboli.

Despite thorough explanation, he refuses to go to the ED. I have commenced him on Clexane at 1.5mg/kg. I would appreciate it if you could see him for further assessment and consider switching him to a NOAC if possible.

Thank you for your assistance.

Polling Question 1

What is this patient’s strongest risk factor for *recurrent* VTE?

a) Factor V Leiden heterozygosity
b) Personal history of VTE
c) Recent ankle surgery
d) Male sex

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What is this patient's strongest risk factor for recurrent VTE?

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Role of inherited thrombophilia testing

- Consider testing in patients under 50 with first episode of venous thromboembolism (VTE) that:
  - occurs in the absence of a major transient risk factors (surgery, trauma, immobility),
  - occurs in the absence of oestrogen-provocation, or
  - occurs at an unusual site
- Screening family members of patients with factor V Leiden or prothrombin gene mutation is discouraged

Risk for VTE	
Strong	Protein C deficiency Protein S deficiency Antithrombin deficiency
Weak	Factor V Leiden Prothrombin gene mutation MTHFR mutation / hyperhomocysteinaemia

Choosing Wisely Australia
An initiative of NPS MedicineWise

Polling Question 2

Assuming normal renal function, what treatment should be commenced in this patient?

a) ED referral for IV heparin
b) Dabigatran 150mg bd
c) Enoxaparin -> warfarin
d) Rivaroxaban 15mg bd

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Assuming normal renal function, what treatment should be commenced in this patient?

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Choice of anticoagulation

DOAC

- can be started immediately in community setting
- no need for enoxaparin or IV heparin
- predictable pharmacokinetics
- flat dosing independent of body weight
- lower major bleeding than LMWH/warfarin

	Rivaroxaban	Apixaban
Initial dose	15mg bd x 21 days	10mg bd x 7 days
Primary treatment (full dose)	20mg od	5mg bd
Secondary prevention (low dose)	10mg od	2.5mg bd

Which patients with VTE should *not* be treated with DOACs?

- **Pregnancy/breastfeeding**
  - LMWH
- **Advanced chronic kidney disease (eGFR <15ml/min (rivaroxaban), <25ml/min (apixaban))**
  - UFH/warfarin
- **Moderate to severe liver disease**
  - LMWH/warfarin
- **Antiphospholipid syndrome**
  - LMWH/warfarin
- **Drug interactions**
  - Rifampicin, phenytoin, carbamazepine, St John's wort

Polling Question 3

What duration of anticoagulation is recommended?

a) Lifelong at full dose
b) 3 months then cease
c) 6 months then cease
d) 3 months then reduce to low dose indefinitely

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What duration of anticoagulation is recommended?

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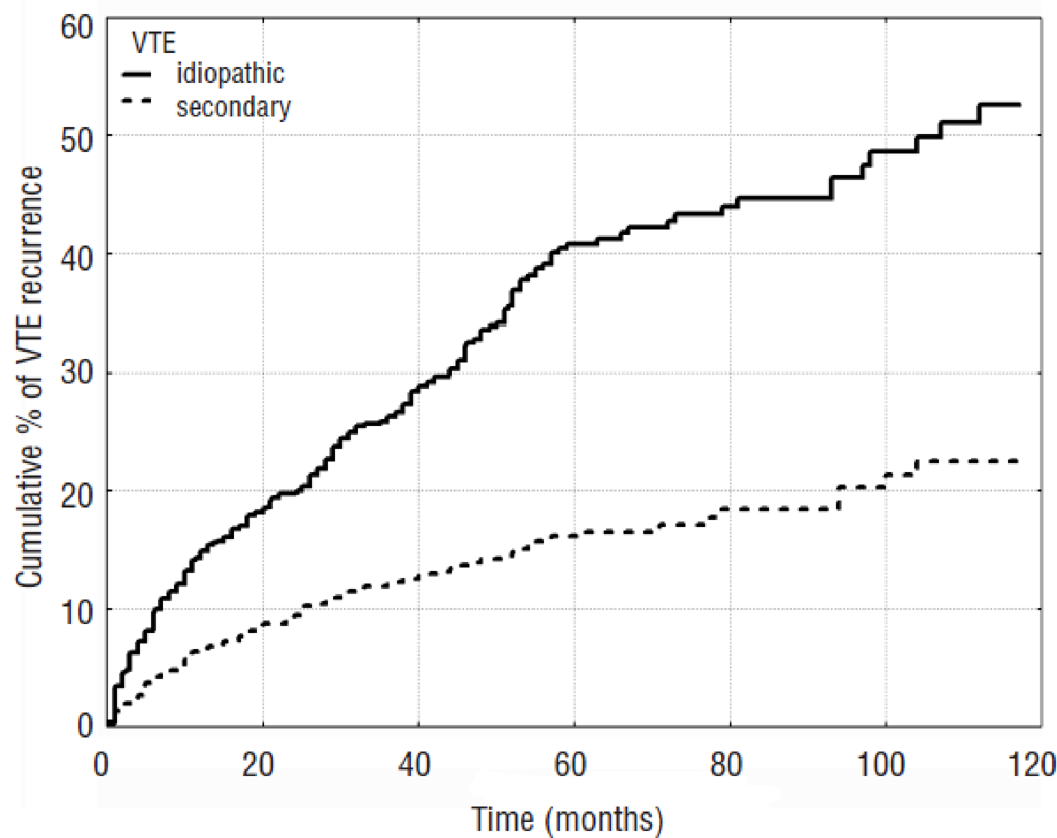
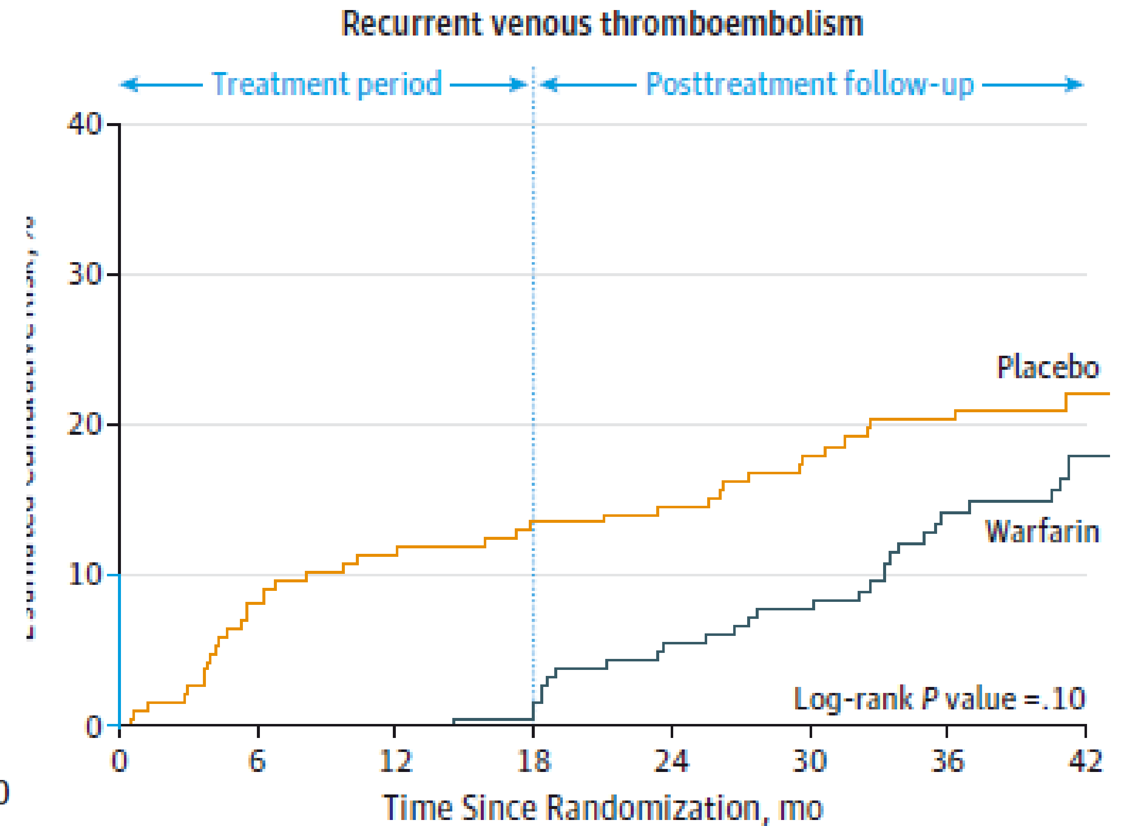
Recurrence risk after cessation of treatment: proximal DVT/PE



Haematologica 2007 Feb;92(2):199-205



JAMA 2015 314(1):31-40

Duration of anticoagulation: proximal DVT/PE

Repeat ultrasound after 3-6 months of anticoagulation to document resolution (complete vs incomplete)

Risk of recurrence

Lowest ← → Highest

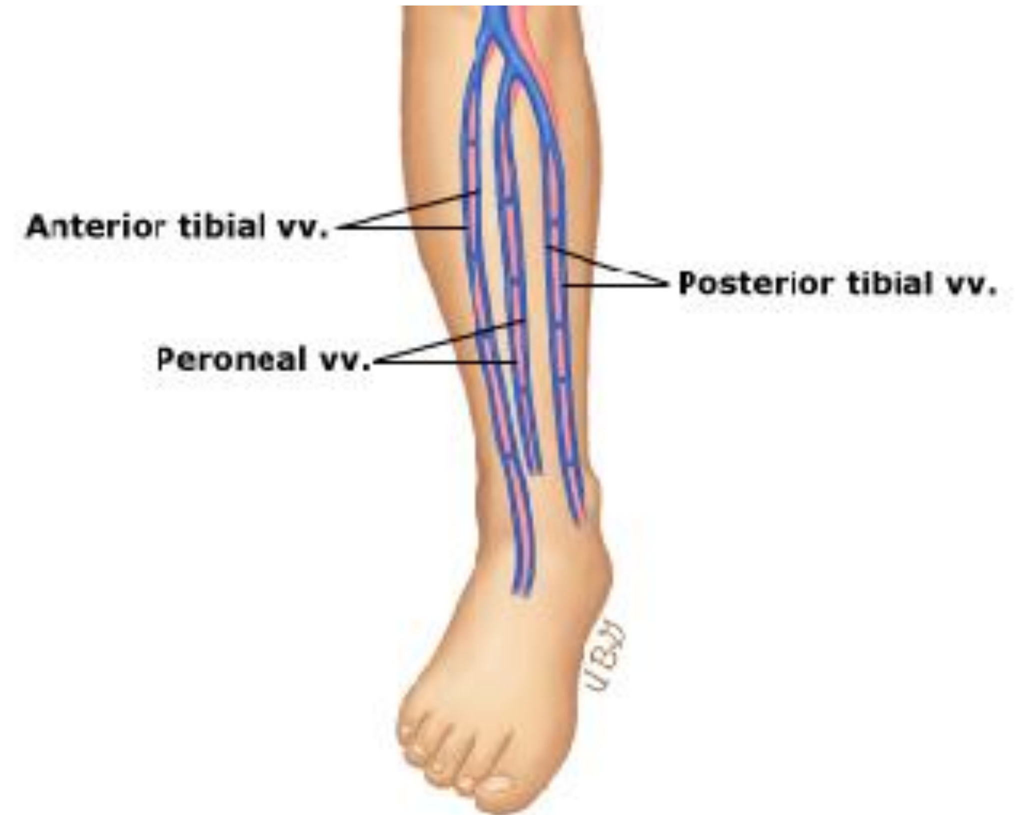
Primary treatment (3mo) full dose, then stop

Primary treatment (6mo), full dose then secondary prevention, low dose

Primary treatment, full dose then secondary prevention, full dose

Duration of anticoagulation: <u>distal</u> DVT

- Provoked, transient risk factor: 6 weeks
- Provoked, persistent risk factor: 3 months
- Unprovoked: 3 months

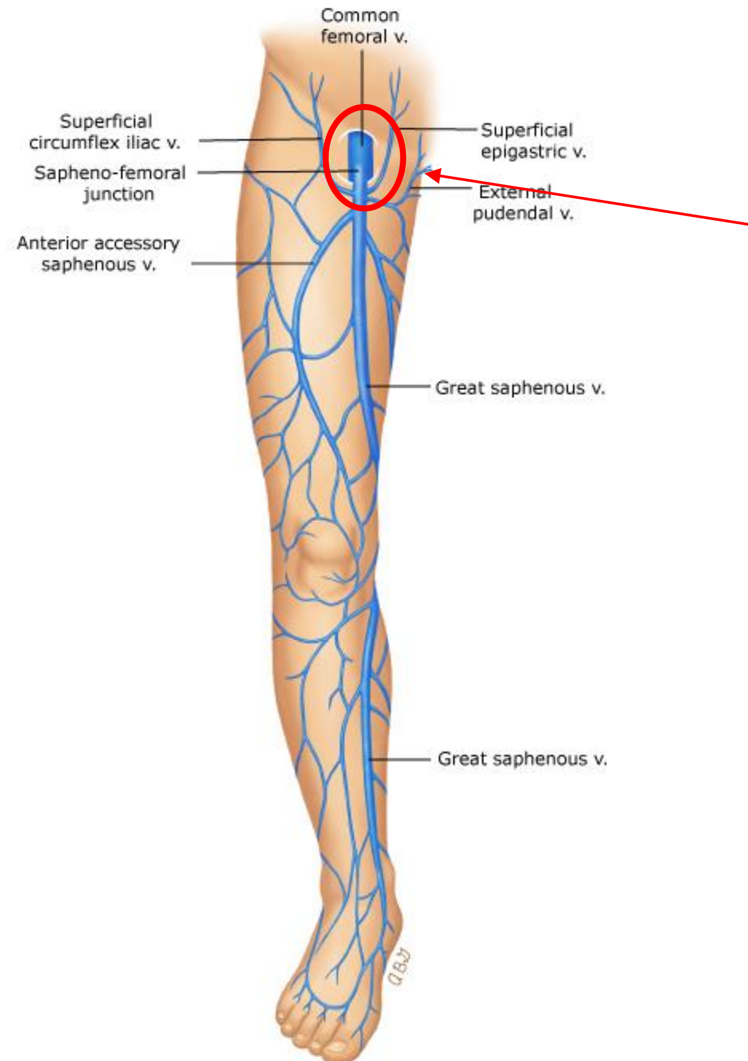


Superficial vein thrombosis

Associated with varicose veins, pregnancy, trauma and other DVT risk factors

General measures:

- oral NSAIDs
- ice, limb elevation
- topical NSAIDs, heparin



Anticoagulation:

Treat as DVT if <3cm of SFJ

Treat with Clexane 40mg/day for 6 weeks if:
- within 3-5cm of SFJ
- thrombus length >5cm
- Persistent symptoms or propagation despite general measures

Managing patients on anticoagulation

- Compression stockings: for relief of symptoms (pain, swelling)
- Post thrombotic syndrome
  - 30-50% of patients with proximal DVT
  - Onset of symptoms within 2 years
    - pain, swelling, erythema, skin pigmentation, venous ulcers

Assessing bleeding risk

- Major surgery <14 days
- Active peptic ulcer disease / other GI pathology
- Age >65-75
- ESRF
- Thrombocytopenia <50 x10^9/L
- Uncontrolled hypertension
- Concomitant medications (ritonavir, azoles, NSAIDs, antiplatelets)

Heavy menstrual bleeding

- affects up to 2/3 of women on anticoagulation
- Rivaroxaban > apixaban > warfarin > dabigatran

Gynae referral

Switch to dabigatran
Mirena/IUD
Tranexamic acid

Continue/commence COCP*
Iron supplementation

Anticoagulation failure/recurrent VTE

- **Confirm recurrence**
  - Recurrent symptoms do not always signify a new event
  - Comparison with prior imaging essential (30-50% have incomplete resolution after initial event)
  - Recurrence excluded if d-dimer negative AND imaging unchanged
- **Review anticoagulant dose and concomitant medications**
- **Compliance**
  - Missed doses?
  - Rivaroxaban taken with food?
- **For bona fide recurrent event on anticoagulation, switch to treatment dose enoxaparin and refer for specialist review**

Resources

- **New guidelines from the Thrombosis and Haemostasis Society of Australia and New Zealand for the diagnosis and management of venous thromboembolism**
    - Med J Aust 2019; 210 (5)
- **American Society of Hematology 2020 guidelines for management of venous thromboembolism: treatment of deep vein thrombosis and pulmonary embolism**
    - Blood Advances 2020; 4(19)