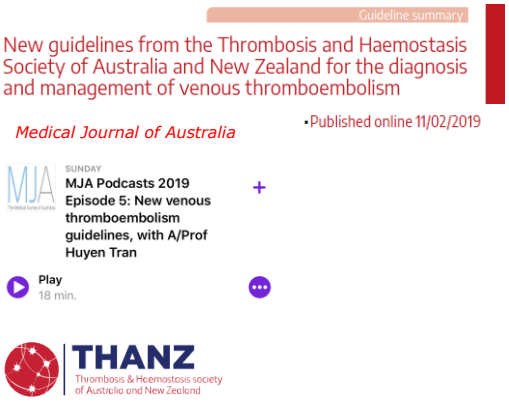
Clinical update no. 533
20 March 2019



https://www.thanz.org.au/resources/thanz-guidelines

The Diagnosis and Management of Venous thromboembolism – Guidelines of the Thrombosis and Haemostasis Society of Australia and New Zealand

New Anticoagulants: A Practical Guide Internal Medicine Journal (44) 2014

An Update of Consensus Guidelines for Warfarin Reversal MJA 198 (4) 2013

Main recommendations:

• Diagnosis should be by imaging; it may be excluded by the use of clinical prediction rules combined with D-dimer testing.

Duration of anticoagulation is guided by context as follows:

Proximal DVT or PE

• Caused by a major surgery or trauma

3 months.

• Unprovoked or a transient risk factor (non-surgical)

3–6 months.

• Recurrent (2 or more) and provoked by active cancer or antiphospholipid syndrome

Extended anticoagulation

Distal DVT

- Transient major provoking factor

6 weeks

Direct oral anticoagulants are preferred over warfarin in the absence of contraindications.

Routine thrombophilia testing is not indicated.

Thrombolysis

Indications are haemodynamically unstable PE

Changes in management as a result of the guideline:

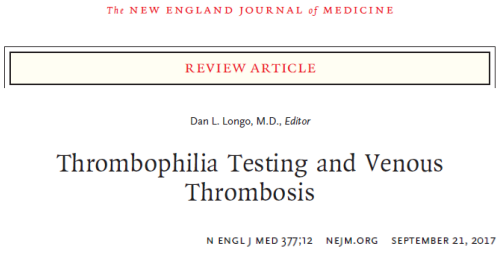
Most patients should be treated with a factor Xa inhibitor.

Type of VTE	Recurrence rate at one year after stopping anticoagulation	Recurrence rate at 5 years after stopping anticoagulation
First VTE provoked by major surgery or major trauma	1%	3%
First VTE provoked by transient risk factor (non-surgical)	5%	15%
Provoked VTE with persistent risk factors (eg, active cancer)	15%	45%
First unprovoked distal DVT	5%	15%
First unprovoked proximal DVT or PE	10%	30%
Second episode of unprovoked VTE	15%	45%

Risk factors for venous thromboembolism

Although hereditary thrombophilia is a risk factor, testing for it is of little clinical benefit and should not be done routinely. There is little controversy about the lack of benefit of testing, but anecdotally it is done a lot.

If it is done then there are criteria as to how and when. Interpretation of results to guide therapy is complex.



"*… The majority of patients with VTE should not be tested for thrombophilia. Data showing the clinical usefulness and benefits of testing are limited or non-existent, as are data supporting the benefit of primary or secondary VTE prophylaxis based on thrombophilia status alone".*

If testing is done, do not test at time of diagnosis (results are inaccurate) and not while on anticoagulant therapy.

Table 2. Summary of Recommendations Regarding Testing for Thrombophilia.*

Do not test at time of VTE event
Do not test while patient is receiving anticoagulant therapy
Do not test if VTE is provoked by strong risk factors

2 Examples of non-surgical transient, or persistent provoking factors for venous thromboembolism (VTE)[5]

Type of VTE risk factor	Examples
Non-surgical transient	• Acute medical illness with immobilisation for at least 3 days • Oestrogen therapy • Pregnancy/post-partum • Leg injury associated with reduced mobility for at least 3 days • Long-haul travel
Persistent provoking	• Active cancer • Ongoing non-malignant condition associated with a twofold or higher increased risk of recurrent VTE after stopping anticoagulant therapy (ie, inflammatory bowel disease and other chronic inflammatory states) • Antiphospholipid syndrome

Risk factors are not equal, though they are grouped together in the Table.

Jeff Kline has researched more than most and outlined categories that do not carry appreciable risk (from ACEP 2015). Travel, smoking, obesity, family history and AF are among them. Risk goes up post partum but very little during pregnancy. Clearly some disgreement with the new Guideline.

From Jeff Kline – ACEP 2015

Not a risk or uncertain IN ED

- Travel
- Smoking
- Obesity
- Family history
- Pregnancy
- Lines, infection, nursing home
- Heart failure and a-fib

Up to 10% with unprovoked DVT/PE are diagnosed with cancer within 12mth. There should be a thorough clinical exam and screening appropriate for age, however CT-abdomen/pelvis does NOT identify more early stage cancers or improve outcome.

Diagnosis and treatment of pulmonary embolism and deep vein thrombosis

The Guideline states the diagnostic yield of testing is about 20% among those where DVT/PE is suspected clinically.

The reality is likely far less. US data suggests the yield for investing PE is <3%. There is substantial overestimation both of the risk for DVT/ PE and of the benefit of treatment.

Clinical prediction rules

Preduction rules are recommended for outpatient and ED, but not inpatient settings.

THE PRACTICE OF EMERGENCY MEDICINE/ORIGINAL RESEARCH

Structured Clinical Decision Aids Are Seldom Compared With Subjective Physician Judgment, and Are Seldom Superior

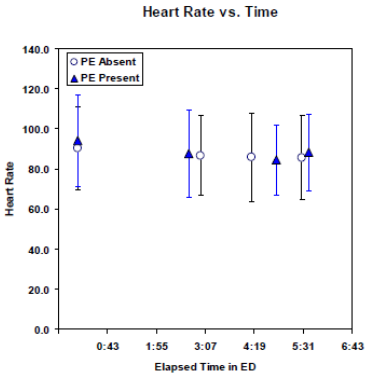
Ann Emerg Med 2017;70:338-344

Decision rules probably perform less well than clinical judgement and gestalt.

Gestalt=Wells=Geneva

Sensitivity (83%) and specificity (52%) at a prevalence of PE of 15%; similar to Wells, Geneva and Revised Geneva

PERC defines rule out criteria – the presence of a risk factor does not mandate imaging, though absence can reliably rule out.



Although vital signs are used, they do not distinguish between PE and other causes of symptoms. Hypoxia is more prounced with infection than PE based on V/Q mismatch (shunt physiology in infection gives hypoxia more than dead space V/Q mismatch with PE)

D-dimer assay

d-dimer testing is of no benefit if PERC 0.

If low risk on other scores a –ve d-dimer rules out. The cut off is 0.5 mg/L.

A cut off of 1.0 mg/L if no DVT or haemoptysis and an alternate diagnosis more likely is safe and avoids further imaging in 75% of patients (YEARS study, *Lancet* July 15. 2017).

Age adjusted d-dimer is safe (age/100). The cut off at 80 yr of age would be 0.8 mg/L