NICE National Institute for Health and Care Excellence

NICE Pathways

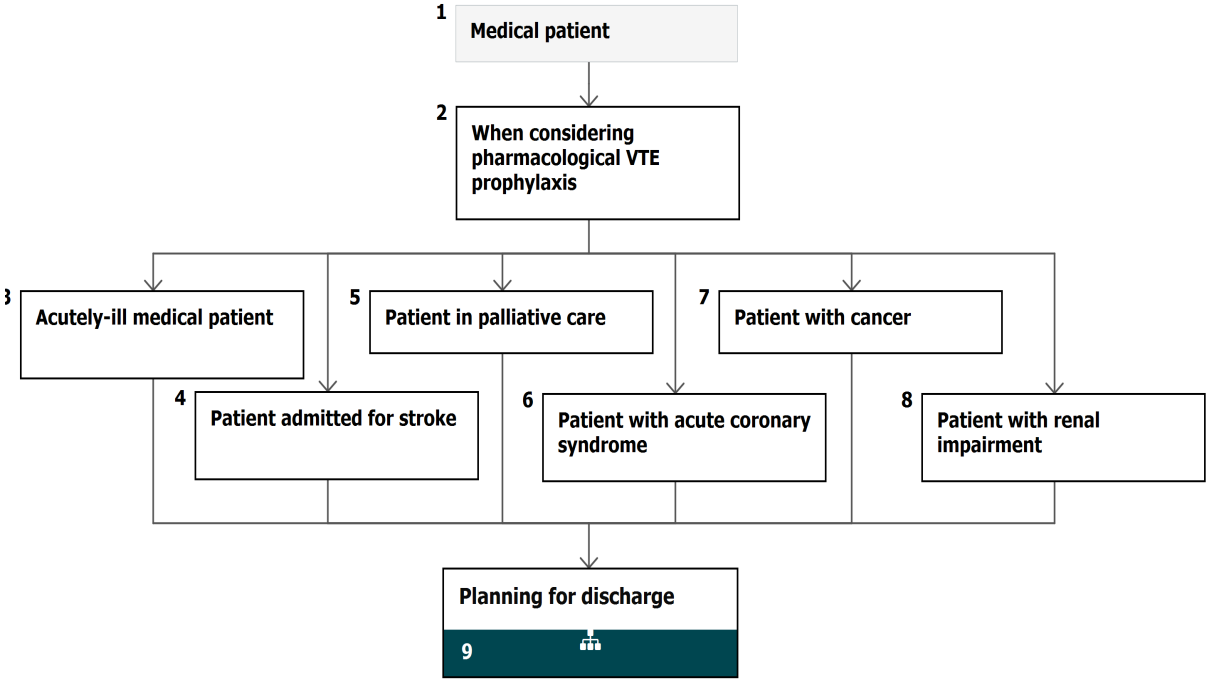
Reducing venous thromboembolism risk: medical patients

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/venous-thromboembolism
NICE Pathway last updated: 20 March 2018

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 Medical patient

No additional information

2 When considering pharmacological VTE prophylaxis

For pharmacological VTE prophylaxis in people under 18, follow the recommendations on apixaban, aspirin, dabigatran etexilate, fondaparinux sodium, low-molecular-weight heparin (LMWH) and rivaroxaban in this flowchart.[1]

When to start pharmacological VTE prophylaxis

If using pharmacological VTE prophylaxis for medical patients, start it as soon as possible and within 14 hours of admission, unless otherwise stated in the population-specific recommendations.

3 Acutely-ill medical patient

Offer pharmacological VTE prophylaxis for a minimum of 7 days to acutely ill medical patients whose risk of VTE outweighs their risk of bleeding:

- LMWH[2] as first-line treatment
- If LMWH is contraindicated use fondaparinux sodium[3].

See what NICE says on acutely ill patients in hospital.

4 Patient admitted for stroke

Do not offer anti-embolism stockings for VTE prophylaxis to people who are admitted for acute stroke.

Consider intermittent pneumatic compression [See page 8] for VTE prophylaxis for people who are immobile and admitted with acute stroke. If using, start it within 3 days of acute stroke.

Explain to the person admitted with acute stroke and their family members or carers (as appropriate) that intermittent pneumatic compression:

[1] At the time of publication (March 2018), these drugs did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

[2] At the time of publication (March 2018), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

[3] At the time of publication (March 2018), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

- reduces the risk of deep vein thrombosis and may increase their chances of survival
- will not help them recover from stroke, and there may be an associated increased risk of surviving with severe disability.

When using intermittent pneumatic compression for people who are admitted with acute stroke, provide it for 30 days or until the person is mobile or discharged, whichever is sooner.

See what NICE says on stroke.

5 Patient in palliative care

Consider pharmacological VTE prophylaxis for people who are having palliative care. Take into account temporary increases in thrombotic risk factors, risk of bleeding, likely life expectancy and the views of the person and their family members or carers (as appropriate):

- Use LMWH[1] as first-line treatment
- If LMWH is contraindicated, use fondaparinux sodium[2].

Do not offer VTE prophylaxis to people in the last days of life.

For recommendations on shared decision-making in the last days of life, see what NICE says on caring for an adult at the end of life.

Review VTE prophylaxis daily for people who are having palliative care, taking into account the views of the person, their family members or carers (as appropriate) and the multidisciplinary team.

6 Patient with acute coronary syndrome

Consider VTE prophylaxis for people at increased risk of VTE who are interrupting anticoagulant therapy.

Be aware that people receiving anticoagulant drugs as part of their treatment for an acute coronary syndrome do not usually need VTE prophylaxis.

See what NICE says on chest pain.

[1] At the time of publication (March 2018), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's

7 Patient with cancer

Do not offer VTE prophylaxis to people with cancer who are receiving cancer-modifying treatments such as radiotherapy, chemotherapy or immunotherapy and who are mobile, except as outlined below, unless they are also at increased risk of VTE because of something other than the cancer.

Consider pharmacological VTE prophylaxis for people with myeloma who are receiving chemotherapy with thalidomide, pomalidomide or lenalidomide with steroids. Choose either:

- aspirin[1] (75 or 150 mg) or
- LMWH[2].

Consider pharmacological VTE prophylaxis with LMWH for people with pancreatic cancer who are receiving chemotherapy.

If giving VTE prophylaxis to people with cancer, continue for as long as they are receiving chemotherapy.]

8 Patient with renal impairment

If using pharmacological VTE prophylaxis for people with renal impairment, choose either LMWH[3] or UFH.

If needed, reduce the dose of LMWH and UFH for people with renal impairment. Base the decision on multidisciplinary or senior opinion, or locally agreed protocols.

9 Planning for discharge

See Venous thromboembolism/reducing venous thromboembolism risk in hospital patients /Planning for discharge

Prescribing guidance: prescribing unlicensed medicines for further information.

[2] At the time of publication (March 2018), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

[1] At the time of publication (March 2018), aspirin did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

[2] At the time of publication (March 2018), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

[3] At the time of publication (March 2018), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

Intermittent pneumatic compression

A method of prophylaxis that includes an air pump and inflatable garments in a system designed to improve venous circulation in the lower limbs of people at risk of deep vein thrombosis or pulmonary embolism. The inflation-deflation cycle of intermittent pneumatic compression therapy simulates the thigh, calf and foot's normal ambulatory pump action increasing both the volume and rate of blood flow, eliminating venous stasis and replicating the effects of the natural muscle pump. Intermittent pneumatic compression devices can be thigh or knee length sleeves that are wrapped around the leg, or a garment that can be wrapped around or worn on the foot that is designed to mimic the actions of walking.

Glossary

APTT

activated partial thromboplastin time

CTPA

computed tomography pulmonary angiogram

Discharge

(in these recommendations, 'discharge' refers to discharge from hospital as an inpatient or after a day procedure)

Discharged

(in these recommendations, 'discharge' refers to discharge from hospital as an inpatient or after a day procedure)

DVT

deep vein thrombosis

Fondaparinux

fondaparinux sodium

HRT

hormone replacement therapy

INR

international normalised ratio (a standardised laboratory measure of blood coagulation used to monitor the adequacy of anticoagulation in patients who are having treatment with a vitamin K antagonist)

LMWH

low molecular weight heparin

LMWHs

low molecular weight heparins

Major bleeding

a bleeding event that results in one or more of the following: death, a decrease in haemoglobin concentration of ≥ 2 g/dl, transfusion of ≥ 2 units of blood, bleeding into a retroperitoneal, intracranial or intraocular site, a serious or life-threatening clinical event, a surgical or medical intervention

PE

pulmonary embolism

Proximal

in the popliteal vein or above; sometimes referred to as 'above-knee'

Provoked

occurring in a patient with an antecedent (within 3 months) and transient major clinical risk factor for venous thromboembolism – for example surgery, trauma, significant immobility (bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or in a chair), pregnancy or puerperium – or in a patient who is having hormonal therapy (oral contraceptive or hormone replacement therapy)

Renal impairment

an estimated glomerular filtration rate (eGFR) of less than 30 ml/min/1.73 m2. (For more detailed information on renal impairment, see what NICE says on chronic kidney disease in adults.)

Severe renal impairment or established renal failure

estimated glomerular filtration rate of less than 30 ml/min/1.73m^2

Significantly reduced mobility

bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or in a chair

UFH

unfractionated heparin

Unprovoked

occurring in a patient with: no antecedent major clinical risk factor for venous thromboembolism – for example surgery, trauma, significant immobility (bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or in a chair), pregnancy or puerperium – who is not having hormonal therapy (oral contraceptive or hormone replacement therapy) **or** active cancer, thrombophilia or a family history of venous thromboembolism, because these are underlying risks that remain constant in the patient

V/Q SPECT

ventilation/perfusion single photon emission computed tomography

VTE

venous thromboembolism

Wells score

a clinical prediction rule for estimating the probability of DVT or PE– there are a number of versions of Wells scores available; this guidance recommends the two-level DVT Wells score

and the two-level PE Wells score

Sources

Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism (2018) NICE guideline NG89

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the

individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.