PREVENTING DEATHS FROM VTE IN HOSPITAL 2: THROMBOPROPHYLAXIS

LEARNING OBJECTIVES

1. Understand the uses and benefits of different types of thromboprophylaxis.
2. Identify the different levels of risk using risk assessment tools for medical and surgical patients.

WHAT IS THROMBOPROPHYLAXIS?
The prevention of clots forming in the veins can be achieved in three ways: chemical thromboprophylaxis; mechanical thromboprophylaxis; or, a combination of chemical and mechanical.

In relatively short-term chemical thromboprophylaxis, heparins are appropriate. For longer-term prevention warfarin is commonly used.

Different types of heparin interrupt the clotting cascade at different levels and work in slightly different ways, depending on whether they are unfractionated heparin (UFH) or low molecular weight heparin (LMWH).

In addition, Factor Xa inhibitors prevent the formation and development of thrombi.

Unfractionated heparin and LMWH are comparable in preventing VTE, but the advantage of LMWH over UFH is that it has been shown to have a better side-effect profile with fewer adverse events (Lechler, 1996). In addition, patients rarely need to undergo the regular clotting tests that are recommended for those on unfractionated heparin.

Examples of commonly used chemical prophylaxis are shown in the table on the Portfolio Pages on nursingtimes.net accompanying this unit, along with their licensed indications.

Low molecular weight heparin can reduce the incidence of VTE by 50% in medical patients (Leizorovicz and Mismetti, 2004) and so is recommended, but mechanical methods have not yet been appropriately evaluated for this group (Department of Health and Donaldson, 2007).

In surgical patients, graduated compression/anti-embolic stockings can be used alone or in combination with LMWH (NICE, 2007). Both these and mechanical foot pumps are designed to support the venous return and prevent blood stasis that can contribute to DVT. If the patient was fully mobile the muscular pump of the leg muscles would carry out this function.

The side-effects of chemical thromboprophylaxis include thrombocytopenia, liver abnormalities, skin rashes and minor bruising. It should be used with caution in patients who have renal failure.

Mechanical methods should be avoided in patients with peripheral vascular disease.

RECOMMENDATIONS FOR PREVENTING VTE IN MEDICINE AND SURGERY
The Royal College of Obstetricians and Gynaecologists has developed guidelines for VTE (RCOG, 2004).

In April this year the chief medical officer (CMO) issued the report of the expert working group on the prevention of thromboembolism in other hospitalised patients (DH and Donaldson, 2007). The report describes VTE as ‘a significant international safety issue’ and makes a number of recommendations. These include: documented mandatory risk assessment for every patient on admission; that there should be ‘improved public and professional understanding of VTE at a national level’; and, that VTE centres of excellence should be established in order to demonstrate best practice.

In addition, the report says that the DH should set core standards for the NHS and independent sector to ensure that there is 100% compliance with the requirement for risk assessment and compliance will be linked to the clinical negligence scheme for trusts (CNST). Risk assessment was discussed in part 1 of this unit.

The report underlines that for both medical and surgical patients, aspirin is not recommended as thromboprophylaxis. Heparins (LMWH and UFH) are effective preventative treatments in medical patients, with LMWH as the preferred type. In intermediate-risk surgical patients the recommendation is for a combination of LMWH and graduated compression stockings, and for low-risk surgical patients to be mobilised early.

NICE (2007) has published specific guidelines relating to high-risk and orthopaedic patients.

NICE guidance
The NICE guidance focuses on inpatients over the age of 18 and VTE prophylaxis for surgical procedures. It has a section addressing each of the following: elective orthopaedic surgery; hip fracture surgery; general surgery; gynaecological surgery (excluding caesarean section); cardiac surgery; thoracic surgery; urological surgery; neurological surgery (including spinal surgery); and, vascular surgery.

In all cases the guidance recommends that healthcare professionals give patients verbal and written information about the risks of VTE and prophylaxis.

Patients should be offered thigh-length graduated compression/anti-embolism stockings from the time they are admitted...
Patient mobility
Patients should be encouraged to mobilise as soon as is practical after surgery in order to get the calf muscle pump working and limit blood stasis. It may be useful to encourage patients to wear their own day clothes if possible rather than nightwear, as this can engender a greater sense of independence. However, it is important to be aware that moving between the bed and chair or out to the bathroom a couple of times a day does not constitute full mobility or a sufficient change in state to warrant reducing thromboprophylactic measures in either medical or surgical patients.

In addition to patients’ initial assessment in both medical and surgical disciplines, they should have regular follow-up assessments throughout their hospital stay. Ideally this would be every 48–72 hours or when their condition changes.

For example, a healthy young surgical patient who has minor upper limb surgery would be low risk on initial assessment. If the patient develops an acute infection, however, their status changes (see Fig 2, Portfolio Pages) and they would need more thromboprophylaxis. Equally, an improvement in a patient’s status might indicate that less thromboprophylaxis is needed.

Nurses’ roles in risk assessment varies. It may be that they need to remind the prescribing doctor to carry out the assessment and document that they have prompted the doctor to do so. However, some trusts pass the role of risk assessment to suitably trained nurse practitioners or nurse prescribers.

CHANGING AND IMPLEMENTING VTE PROPHYLAXIS POLICY

The CMO’s report and NICE guidance indicate that where no thromboprophylaxis policy exists, trusts should develop one. A committee representing interested parties from within the trust should be appointed to help develop and implement the policy. Its members should also provide support and advice and promote best practice (Prandoni et al, 1996).

It is always of benefit to have proactive committee members who have the motivation to take on this supportive and educational role. This helps to ensure that action is taken as a result of the policy.

Committee members might usefully include representatives from medicine, haematology, obstetrics, gynaecology, surgery (all specialties, including orthopaedics), risk management, the audit department and management, plus the trust chief executive and clinical governance leads.

A committee and policy will comply with clinical governance, and regular audit will provide an insight into the uptake of the policy as well as highlighting any need for further education (Prandoni et al, 1996).

CONCLUSION
Venous thromboembolism has been called ‘the silent killer’ (DH and Donaldson, 2007) and although it is not always a visible problem, it is a preventable one. The clinical and economic impact of VTE is underestimated, as is the human cost to patients’ long-term health.

It is recommended that all patients are risk-assessed on admission to hospital and the appropriate action taken as a result. This would, very simply, save many thousands of lives.

Healthcare professionals need to be fully aware of the risks patients face just through being patients.