Venous thromboembolism

This issue's special feature, on which these questions are based, was commissioned from independent authors. The Life-long Learning scheme is supported by an educational grant from Mayne Pharma but the company has no editorial input. The scheme is open to all pharmacists. The information in the box below should help readers to identify knowledge gaps and undertake continuing professional development. Readers are also invited to complete the questions overleaf on venous thromboembolism, to test their knowledge of the articles, and send their answers, together with a stamped and addressed A5 envelope, to:

Life-long Learning —VTE
Hospital Pharmacist
1 Lambeth High Street
London SE1 7JN

Entries must be received by 24 July. Results will be returned with a certificate of completion.

Mayne Pharma is offering a place as part of its delegation to the European Association of Hospital Pharmacists conference in spring 2007 to the entrant who achieves the highest marks overall in this series of exercises. The best eight scores from the ten exercises in the series (September 2005 – July/August 2006) will be taken into consideration. This is the ninth set of questions.

The runner-up will receive registration and expenses for the *Hospital Pharmacist* conference in 2007. Third and fourth place, respectively, will receive Pharmaceutical Press vouchers and British Society for the History of Pharmacy china mugs. Further details on this scheme can be found in *Hospital Pharmacist* (2004;11:436) and at www.pjonline.com/lifelong

Your name, address and scores will be held on a database for the purpose of awarding prizes. Should you wish your details not to be held in this way, please tick the box. If you do this, you will be sent a certificate, but you will be ineligible for a prize. ❑

Name:

RPSGB registration number:

Address:

Post code:

How to undertake continuing professional development

Identify knowledge gaps

- To understand the causes of venous thromboembolism and the techniques used for diagnosis
- To understand the drug regimens used for VTE treatment and prophylaxis

Act

- Read the articles in this issue
- Test your knowledge by answering the multiple-choice questions on VTE overleaf

Evaluate

- What have you learnt?
- How has it added value to your practice?
- What will you do now and how will this be achieved?

The feature on VTE has been accredited by the College of Pharmacy Practice against the Royal Pharmaceutical Society's general and hospital practice areas of competence, which can be accessed via *Hospital Pharmacist* online (www.pjonline.com/lifelong)

Reading the feature and completing the questions will help readers to fulfil aspects of the following competency areas, depending on their area of practice and application of learning: G1, G5, G8, G9, HP1, HP2, HP4, HP5, HP10.

Completion of the questions entitles undergraduates to one point towards the Professional Development Certificate, a joint initiative between the British Pharmaceutical Students' Association and the College.

The assistance of the College of Pharmacy Practice is acknowledged in producing the CPD elements of this month's special feature.

Further information on how hospital pharmacists are approaching the challenges of CPD can be found in articles in the February 2005 issue of *Hospital Pharmacist* (2005;12:65–72).

To answer the questions, tick either the True or False column

		True	False
1.	**Concerning DVT:**		
a)	Mortality from DVT is secondary to pulmonary embolism		
b)	Most calf DVTs will spread proximally and are prone to embolisation		
c)	DVTs always arise in the deep veins of the calf		
d)	Greater leg swelling indicates a more extensive DVT		
e)	All patients with DVT describe calf pain		
2.	**Concerning PE:**		
a)	Taking HRT does not affect the risk of developing PE		
b)	Occlusion of the pulmonary arteries can lead to right heart failure		
c)	The majority of thromboemboli migrate to the right lung		
d)	The lower lobes of the lung are the sites most commonly affected		
e)	PE usually causes pulmonary infarction		
3.	**Concerning the investigation and diagnosis of DVT:**		
a)	D-dimer assays are useful for confirming diagnosis of DVT		
b)	Risk factors should always be taken into account when investigating possible DVT		
c)	Contrast venography is the investigation technique of choice for patients with suspected DVT		
d)	Duplex ultrasonography may identify alternative diagnoses such as an abscess or haematoma		
e)	MRI scans can be useful for detecting DVT in the second and third trimester of pregnancy		
4.	**Concerning the investigation and diagnosis of PE:**		
a)	Scoring algorithms such as the Wells Clinical Score are useful in determining PE risk		
b)	Patients with PE may have a normal arterial oxygen saturation		
c)	Patients with PE always have an abnormal ECG		
d)	A positive V/Q scan confirms the presence of PE		
e)	Pulmonary angiography is a simple and safe technique for diagnosing PE		
5.	**Regarding the treatment of VTE (1):**		
a)	Heparin therapy should not be started until the diagnosis of VTE is confirmed		
b)	The APTT ratio is used to monitor treatment with UFH and should be checked 4-6 hours after the initiation of treatment		
c)	Protamine does not fully reverse the effects of LMWHs		
d)	UFHs are now more commonly used than LMWHs		
e)	Alteplase is the only thrombolytic agent licensed in the UK for the management of PE		

Answers will appear in the September 2006 issue

		True	False
6.	**Regarding the treatment of VTE (2):**		
a)	LMWHs can be given as a once daily dose		
b)	Bemiparin, dalteparin, enoxaparin and tinzaparin can be considered to be interchangeable		
c)	All patients with DVT must be treated in hospital		
d)	Patients with malignancy may remain on LMWH instead of switching to a vitamin K antagonist		
e)	The elderly usually require higher doses of warfarin		
7.	**Concerning heparin induced thrombocytopenia (HIT)**		
a)	The incidence of HIT is higher with LMWH than UFH		
b)	Typically the platelet count will drop to levels of 10×10^9/L or less		
c)	The platelet count may drop more rapidly in patients who have received heparins in the preceding three months		
d)	If UFH causes HIT, alternative treatments such as LMWHs may be used		
e)	The dose of lepirudin requires adjusting in patients with renal impairment		
8.	**Regarding vitamin K antagonists (1):**		
a)	Warfarin acts by interfering with the synthesis of the clotting factors II, VII, IX and X		
b)	The initial dose of warfarin should not exceed 10mg		
c)	In the treatment of VTE the target international normalised ratio (INR) is always 2.5		
d)	The minimum duration of treatment for proven VTE is six weeks		
e)	Once the required duration of treatment with warfarin has been completed the dose should be tailed off over six weeks		
9.	**Regarding vitamin K antagonists (2):**		
a)	Warfarin treatment should not be started until LMWH/UFH treatment has stopped		
b)	Herbal medications that interfere with warfarin include ginkgo, garlic and St John's wort		
c)	Patients taking warfarin should be advised not to drink grapefruit juice		
d)	Management of excessive anticoagulation due to warfarin may involve the administration of phytomenadione orally		
e)	Once a patient's INR has stabilised, INR monitoring can be performed every four weeks		
10.	**In the prophylaxis of VTE**		
a)	Patients in hospital have a ten times greater risk of VTE		
b)	Medical illnesses that increase the risk of VTE include inflammatory bowel disease and respiratory failure		
c)	Dalteparin and tinzaparin are the only LMWHs that are licensed for the prophylaxis of VTE in medical patients		
d)	For prophylaxis of VTE, fondaparinux is given as an intravenous injection		
e)	LMWHs have superseded UFHs in VTE prophylaxis		