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Clinical & Scientific letters

Letters not directly related to articles published in *Clinical Medicine* and presenting unpublished original data should be submitted for publication in this section. Clinical and scientific letters should not exceed 500 words and may include one table and up to five references.

Acute thromboembolism in medical inpatients: the need for a focus on prevention rather than cure

Venous thromboembolism (VTE) is a major cause of morbidity and mortality in medical inpatients. Autopsy studies show that approximately 75% of patients dying from pulmonary embolisms (PEs) in general hospitals were immobilised patients with medical illnesses[1] and that, overall, PEs cause or contribute to approximately 1 in 10 hospital deaths of medical patients admitted to general hospitals.[2] Thromboprophylaxis is highly effective and cost-effective, with PE being the most common, preventable cause of hospital death. Despite various current clinical guidelines, physicians fail to prescribe effective thromboprophylaxis for the majority of medical inpatients at risk of VTE. Unfortunately, the majority of clinical meetings and conferences – such as the Royal College of Physicians (RCP) conference held in April 2005 and reported recently in *Clinical Medicine* (*Clin Med* July/August 2005, pp 402–5) – have focused largely on the assessment, investigation and treatment of suspected VTE in medical patients, with limited discussion on the need for a simplified approach to VTE prophylaxis in this patient group.

The Agency for Healthcare Research and Quality has published a report entitled 'Making health care safer: a critical analysis of patient safety practices'.[3] This systematic review ranked 79 patient-safety interventions based on the strength of the evidence supporting more widespread implementation of these procedures. The highest ranked safety practice was the 'appropriate use of prophylaxis to prevent VTE in patients at risk'. During the last 30 years many studies have shown that unfractionated heparin and low-molecular-weight heparin (LMWH) are effective and safe for the prevention of venous thromboembolism in surgical patients leading to widespread use of these agents for thromboprophylaxis in such cases. Far fewer trials, however, have investigated the benefit of thromboprophylaxis in medical patients.

Despite this, several consensus groups, including the American College of Chest Physicians (ACCP)[4], the Scottish Intercollegiate Guidelines network (SIGN)[5],

Table 1. Risk factors used in the MEDENOX trial.

Risk factors required for patient inclusion in MEDENOX Trial	Additional risk factors analysed in the trial
Congestive heart failure (NYHA III and IV)	Age >75
Acute respiratory failure	Previous VTE
Acute infection	Obesity: BMI > 30 for men. >28 for women
Acute rheumatic disorders	Varicose veins
Inflammatory bowel disease	Chronic heart failure
	Chronic respiratory failure
	Immobility Independent walking <10 metres

Sub-group analysis has shown that medical patients suffering from any one of the risk factors shown in Table 1, except acute rheumatic disorders and inflammatory bowel disease due to low patient numbers, had significant relative risk reductions (from 22% to 50% ($p<0.05$) in the incidence of VTE by receiving 40mg enoxaparin SC OD compared to placebo.

Please note that the risk factors described in the PREVENT trial were similar but not identical.

and the International Consensus Statement[6], have strongly recommended prophylaxis in medical patients (in 2004, 2003 and 2001 respectively). These recommendations have been based largely on the evidence of a few well constructed landmark studies such as the MEDENOX trial[7] and the PREVENT Study,[8] both of which showed clear significant reduction in the incidence of VTE in medical inpatients randomised to receive LMWH rather than placebo. Prophylaxis of VTE, however, is significantly underused in medical patients as illustrated by a May 2004 audit at the John Radcliffe Hospital, Oxford that concluded that 76% of medical inpatients at high risk of VTE, with no contraindications to VTE prophylaxis, did not receive adequate prophylaxis. Taking into account the evidence, why are clinicians so reluctant to prescribe routine VTE prophylaxis?

The first reason relates to the nature of VTE. Because VTE is often clinically silent, many physicians perceive of incidence VTE to be rare. Conversely, the possible side effects of prophylaxis, including thrombocytopenia and haemorrhage, are actually very rare but nevertheless they are frequently attributed, inappropriately, to the use of prophylaxis. Secondly, the complexity and inconsistencies between the various current guidelines leave the clinician uncertain of which risk stratification to use when considering thromboprophylaxis in a medical patient. For example the SIGN guideline suggests aspirin as a reasonable VTE prophylactic agent, whereas the ACCP guideline recommends against the use of aspirin alone as a prophylactic agent in all patient groups. Additionally, the guidelines tend to use umbrella terms in their risk stratification such as 'infections', 'respiratory failure', and 'immobilisation'. These terms are too nonspecific to enable accurate prescription of VTE prophylaxis in the clinical setting. Finally, at present there are limited data on the actual mortality benefit of VTE prophylaxis. In the MEDENOX trial[7], mortality at 14 days was 4.4% in the placebo group and 3.3% in the patient group given 40 mg Enoxaparin – this benefit was not, however, statistically significant.

It is clear that appropriate VTE prophylaxis in medical inpatients will significantly reduce the burden of this disease, but further studies are required to confirm the mortality benefit from VTE prophylaxis in medical patients and the optimum duration of prophylaxis required in these patients. Once these have been evaluated, a simplified national guideline would enable higher clinical compliance in the prescription of VTE prophylaxis in medical patients.

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