a desirable benefit-to-risk ratio.[1,2] In the UK, fixed doses of low molecular weight heparin (LMWH) are used for VTE prophylaxis regardless of patient weight.[3] While the effects of LMWHs are not usually routinely monitored, levels of anti-Xa have been used to determine if standard prophylactic doses of LMWH provide adequate prophylactic cover to obese patients. An inverse correlation between anti-Xa levels in the first 10 hours and body weight with fixed prophylactic doses of 40 mg enoxaparin has been demonstrated, which suggests that current fixed-dose thromboprophylaxis is likely inadequate in heavier patients.[3,4]

A review of observational studies suggests that with fixed dose thromboprophylaxis, VTE rates in the obese are twice that of the non-obese, with a subgroup analysis of the PREVENT trial demonstrating no benefit of standard-dose dalteparin over placebo in the morbidly obese population.[3]

Randomised control trials involving bariatric surgery groups have demonstrated lower rates of VTE with higher doses of LMWH, with no associated increase in bleeding events. Severely and morbidly obese patients have been consistently under-represented in larger studies of thromboprophylaxis thus far, making it challenging to apply fixed-dose thromboprophylaxis to this growing segment of the population with any confidence.[3,5] Furthermore, studies have shown that obese patients have increased renal clearance compared to the non-obese, and LMWHs are renally excreted.[3,4]

Royal Bournemouth Hospital and Poole Hospital had two serious untoward incidents in which patients died due to pulmonary emboli. The patients had both been on standard VTE prophylaxis as per the trust guidelines. This led to a review of practice, which produced a revised weight-based prophylactic dosing regimen (Table 1).

The new guidelines were introduced early in 2015. We audited all new medical admissions over a 48-hour period in February 2015, supplemented by a questionnaire sent to all junior doctors regarding their knowledge of the changes. Out of 74 patients, 64 had completed VTE assessments (86.5%). Out of 59 patients assessed as requiring VTE prophylaxis, 49 were prescribed either mechanical prophylaxis, LMWH, unfractionated heparin or oral anticoagulants (83.05%). Of the 33 patients prescribed dalteparin, the LMWH used in the trust, only 24 were dosed appropriately for their weight as per the revised hospital guidelines (72.72%).

The survey was sent to 60 junior doctors, 17 responded to the survey. Only 65% of these were aware that there had been a change in guidelines, with only 29% of these aware of the correct dosing for 100–150 kg and only 18% aware of the correct dosing for >150 kg.

These data show that thorough and wide-reaching education is needed when essential guidelines are changed. Weight-based thromboprophylaxis should be considered by all trusts in view of the current evidence, and further work should be undertaken if more robust evidence is needed for this to be nationally recognised. ■

Table 1. Weight-based thromboprophylaxis dosage.

Drug	Weight, kg			
	<50	50–99	100–150	>150
Dalteparin, IU	2,500 od	5,000 od	5,000 bd	7,500 bd

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The limited role of cranial computerised tomography in the assessment of a medical patient

Introduction

Computerised tomography (CT) examinations are often used in the initial assessment of medical patients. Cranial CT scans are probably the most common CT examination performed in developed nations.[1] Although there are good indications for cranial CT in the context of trauma, the indications among non-trauma patients referred for medical assessment are not so clear.[2] In developed nations, many hospitals now have ready access to magnetic resonance scanners and magnetic resonance imaging (MRI) of the brain has a number of advantages over cranial CT in the assessment of medical patients.[3] We recently audited the use of cranial CT in the assessment of patients referred to the medical assessment unit (MAU) in our hospital.

Methods

All patients referred to the MAU over a three-month period who underwent cranial CT scans were examined. Some of these patients also went on to have MRI of the brain. 192 patients were identified and the age ranged between 17 and 96 years old.

Results

The common indications for cranial CT were altered mental state (n=52; 27%), headache (n=36; 19%) and dizziness (n=35; 18%). The key finding was that the cranial CT revealed an abnormality related to the patient's presenting symptoms in only 10 (5%) patients. Cerebral infarction was detected in

8 (4.2%) and a mass lesion in 2 (1%) patients. Other unrelated abnormalities detected were periventricular white matter changes (n=42; 22%), cerebral atrophy (n=26; 14%) and old cerebral infarction (n=16; 7%). All patients who had an acute abnormality detected on the cranial CT had a focal neurological deficit on examination. Of the 192 patients, 52 patients also had a MRI study of the brain during their hospital stay. 12 of these patients had findings on MRI relevant to their presenting symptom that were not evident on the cranial CT (10 had features of cerebral ischaemia, 1 had leptomeningeal enhancement after contrast in keeping with carcinomatosis and 1 had facial nerve enhancement on MRI with clinical features of Bell's palsy).

Discussion

The poor yield of cranial CT in the evaluation of syncope, dizziness, confusion, delirium, headache and the older patient has been previously described.[4–8] These indications constitute a significant proportion of those referred for medical evaluation. Among the patients studied in this audit, altered mental state and focal neurological deficit on examination were good predictors for detecting an abnormality on cranial CT. If cranial CT was limited to those with focal neurological deficit and altered mental state, only 45 of the 192 patients would have needed a cranial CT and no clinically significant abnormality missed.

The substantial increase in the use of CT in recent years has resulted in increasing exposure to radiation and there is increasing recognition to minimize exposure.[9] The relatively rapid access and lower cost have been important factors favouring CT use. It can be argued that the judicious use of cranial CT with better use of MRI may allow better use of resources and ultimately be cost effective. We don't feel that the liberal use of cranial CT is unique to our institution. Better awareness, adoption of clinical decision tools and the increasing availability of MRI in hospitals is likely to alter the way cranial CT is used in the future. ■

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