Simple measures can improve care in our hospitals - an audit of venous thromboembolism practice

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Abstract

Venous thromboembolism (VTE) is a serious but preventable complication of hospitalisation. Doctors still sometimes fail to adhere to them, thus putting patients at risk and incurring considerable expense for the national health service. We chose to audit the practice of doctors in our geriatric facility, and assessed the effect of a memoire to increase compliance. We also explore how our hospitals can learn from the experience of other centres, where the risk of litigation has brought this condition to the forefront. Compliance improved from 30.7% to 63.3%, which was statistically significant. We would suggest that a centralised and organised approach could produce even greater levels of compliance.

Keywords

Deep vein thrombosis, pulmonary embolism, venous thromboembolism, prophylaxis, geriatric medicine

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Hospitalisation is known to be a particularly important risk factor for venous thromboembolism (VTE),[1,2,3,4] and good clinical practice requires that all inpatients are risk-assessed repeatedly for predisposition to this disease.[5] Medical patients are less likely to be adequately risk-assessed than other patients, despite accounting for the majority of reported cases of VTE.[1,3,6] We wanted to investigate the level of compliance with guidelines in our geriatric facility, and whether we could improve it with simple measures to increase awareness.

Method

We used the guidelines by the Scottish Intercollegiate Network (SIGN) as our benchmark,[5,9] and data was collected by retrospective review of patient-notes. We included the first 40 patients discharged from hospital or deceased, starting from an arbitrary date. This value was chosen because it corresponded to 20% of the inpatient capacity at the time. Patients were only excluded if they were on anticoagulation or if their notes were irretrievable. Risks of thrombosis were considered high if patients had more than two risk factors for VTE, or if they were recovering from hip, knee or abdomino-pelvic surgery. We noted the indications for prophylaxis, documentation of risk-assessment, preventative measures used and any contraindications. For each case, we noted whether management followed guidelines as suggested by SIGN. Since most patients are transferred from acute care, some were already on prophylaxis at the time of admission to our facility. We reported outcome as the proportion of patients adequately risk-assessed and treated.

We designed a simple memoire on an A4-sheet to remind different members of the multidisciplinary team of the importance of risk-assessment (see figure 1). It included a list of the commoner risk factors, and was circulated to all wards and attached to patients' treatment charts. We then repeated our audit a few months later and compared the outcomes.

Figure 1: Reproduction of the proforma used for the purpose of the audit

Ethics

The need for individual informed consent was waived because this was a retrospective analysis of the routine care of patients, and there was no breach of privacy or anonymity.

Results

The characteristics of the two populations are outlined in table 1. In the first arm, compliance was found to be only 30.7% (95% confidence interval 12.4% - 60.0%). This had improved to 63.3% in the second arm (95% confidence interval 45.5% - 78.2%). This difference was found to be statistically significant (one-tailed p value 0.02). Medical patients formed the largest single group in both arms, although there were more surgical and orthopaedic patients in the second part of our audit (table 1). The most common risk factors in our patients were immobility, active medical disease and obesity, and the most common active medical conditions listed were sepsis and pulmonary oedema.

Discussion

VTE prophylaxis is known to efficacious, safe and cost-effective.[7-8] Our audit suggests that a lot more needs to be done to improve compliance with guidelines. However, we also find the outcome encouraging, as it suggests that simple measures can greatly improve the level of care we provide. The main limitations of our audit are its small size and its retrospective approach. It was not powered to answer detailed questions about how we use VTE prophylaxis. During the same time period, an admission proforma was implemented at the main acute facility including a reminder to risk-assess patients for VTE, and may have contributed to our results. The larger number of orthopoaedic patients in the second part of our audit may also have contributed to the increase in compliance seen.

We can't overemphasise the importance of documentation – both of indications and contraindications for VTE, and of any patient preferences that influence clinical decisions. Simple measures, like hydration and early mobilisation, should be implemented generally for all patients.[9]

Conclusion

We should be guided by the experience of other centres, which have achieved excellent results using a variety of simple measures, regular re-audit and individual feedback.[4] We would particularly recommend making better use of our IT system which can be a powerful way to prompt staff to think of VTE.[4] We can also implement the same strategy in other areas of concern in patient management.

Table I : A comparison between the two legs of the audit, outlining patient characteristics and results.

	1st leg of audit	2nd leg of audit
Number of patients included	38	40
Number of patients excluded	4	2
Males (%)	17 (44.7%)	17 (42.5%)
Age ≤60 (%)	0 (0%)	1 (2.5%)
Age 61-70 (%)	2 (5.3%)	2 (5.0%)
Age 71-80 (%)	16 (42.1%)	17 (42.5%)
Age 81-90 (%)	18 (47.4%)	17 (42.5%)
Age >90 (%)	2 (5.3%)	3 (7.5%)
Reasons for primary admission*		
Medical	24 (63.2%)	17 (42.5%)
Surgical	2 (5.3%)	5 (12.5%)
Orthopaedic	4 (10.5%)	15 (37.5%)
Other (neurosurgery, rehabilitation, social issues)	8 (21.1%)	3 (7.5%)
DVT prophylaxis at time of referral	7 (18.4%)	17 (42.5%)
Prophylaxis indicated at any time during admission#	**13 (34.2%)**	**30 (75%)**
Prophylaxis appropriately administered	**4/13 (30.7%)**	**19/30 (63.3%)**

**Primary admission: for those patients transferred from other centres, refers to the reason for requiring acute care.*

#Risk factors cited: active medical conditions (e.g. heart failure, sepsis, acute coronary syndromes, NMS), active malignancy, decreased mobility (including stroke), obesity, previous VTE.

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