Preventing VTE in patients immobilised in lower limb cast

January 2010

Introduction

Immobility from having a lower limb in plaster (or similar) is recognised as a patient-related risk factor for venous thromboembolism\(^1\). The National Institute for Health and Clinical Effectiveness (NICE) suggest in their draft guidelines\(^1\) (2009) that VTE prophylaxis for patients with lower limb plaster casts who are assessed to be at increased risk of VTE should be considered after carefully evaluating the risks and benefits. A recent review\(^2\) found that in adults with leg immobilisation, thromboprophylaxis with LMWH reduces the risk of VTE by about half, with a low risk of bleeding events.

A patient-completed VTE risk assessment proforma was developed and approved by the Thrombosis committee in 2009. All patients attending the Fracture Clinic for application of a lower limb plaster were given the questionnaire to complete (appendix 1). Depending on their risk score, the patients were either given advice on preventative measures for VTE only, or were additionally prescribed LMWH to be self-administered for the duration of the lower limb plaster. The completed questionnaires were kept in the clinic.

This audit is based on the results from all completed questionnaires since the initiative began to the current day (November 2009 – January 2011).

**Indicators**

<table>
<thead>
<tr>
<th>standard</th>
<th>percentage</th>
<th>exceptions</th>
<th>evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients attending the fracture clinic for lower limb plaster to complete a self-administered questionnaire.</td>
<td>100%</td>
<td>Patient refusal</td>
<td>Completed questionnaires in clinic</td>
</tr>
<tr>
<td>The management of all patients scoring 3 or more to be discussed with the clinic doctor</td>
<td>100%</td>
<td>none</td>
<td>Completed questionnaires</td>
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</table>

**Results**

499 patients completed a VTE risk assessment questionnaire. None refused to complete the questionnaire.

499 questionnaires were included in the analysis.
All patients with a risk score of 3 or greater, were discussed by the nurse with the clinic doctor.
A clinical decision was made not to prescribe prophylaxis in 4 patients
One patient declined prophylaxis.

To determine whether any patients subsequently developed a VTE event, the patients included in the audit were then cross-referenced against the database of patients referred to the Anticoagulation clinic

Two patients who had been seen in the Fracture Clinic subsequently developed a VTE event.
- The patient scored 4 and a clinical decision was made not to prescribe Dalteparin (risk factors were age and complex lower limb surgery).
- The patient scored 1 (risk factor was age).
Patient acceptance
Following approval by the Public and Patient Involvement Group, an additional questionnaire was given to those patients who were prescribed LMWH (appendix 2).

One patient returned the questionnaire to the clinic. The patient reported that he knew the reason why LMWH had been prescribed, had been given additional information to take home and gave himself the injections without any problems every day.

In an effort to increase the number of patients who returned the questionnaire, self-addressed stamped envelopes were given to the patients, two months into the initiative.

Conclusions
The fracture staff have found the tool simple to use and helpful. There have been no reports of any difficulties that patients have had in completing the tool.

The scoring system effectively distinguishes between patients with, and without, predictable VTE risk.

Cross-linking to the VTE database facilitates clinical learning from adverse events.

VTE rates are lower than might be expected in this group of patients and provides limited support for the continued use of LMWH in selected patients in this high risk group.

Recommendations

<table>
<thead>
<tr>
<th>Action</th>
<th>by whom</th>
<th>by when</th>
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<tbody>
<tr>
<td>Audit second three months of patients</td>
<td>KB</td>
<td>March 2010</td>
</tr>
<tr>
<td>Take report to Thrombosis Committee</td>
<td>KB</td>
<td>March 2010</td>
</tr>
<tr>
<td>Send report to Clinical Director for orthopaedics</td>
<td>KB</td>
<td>Mid Feb 2010</td>
</tr>
</tbody>
</table>

References

1. Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital. NICE draft guideline 2009