Preventing VTE in patients undergoing vascular day case procedures

Patients undergoing vascular surgery have a high risk for VTE. Potential risk factors in vascular surgery include advanced age, limb ischemia, long duration of surgery, and venous injury. The incidence of clinically overt VTE occurring during the hospital stay or requiring re-hospitalisation within 3 months after surgery has been shown to range from 2.5% to 2.9%. In the absence of prophylaxis, the rate of DVT is around 21% when routine contrast venography is obtained and 15% when routine postoperative ultrasonography is performed.

One study showed that the rate of PE in vascular surgery patients was 0.45%. From Hospital Episode Statistics (HES) data 2003/4 NICE estimate that the incidence of symptomatic venous thromboembolism (VTE) in vascular patients is 0.70% although they recognise that the incidence figures for VTE estimated using HES data are much lower than other estimates, implying under-reporting and/or treatment in the community.

Patients undergoing vascular surgery have a high risk for VTE with advanced age, limb ischemia and venous injury cited as some of the specific risk factors. Patients undergoing vascular procedures who have additional thromboembolic risk factors should receive antithrombotic prophylaxis. NICE recommend that in vascular patients pharmacological VTE prophylaxis should be given for patients who have a low risk of major bleeding, taking into account individual patient factors and according to clinical judgement, this applies equally to inpatient and day surgery patients.

Preventing VTE events is particularly important in these patients because by definition they already have abnormal limb vasculature and further damage increases the risk of chronic leg ulcers.

A patient-completed VTE risk assessment proforma for use in the Fracture Clinic was developed and approved by the Thrombosis committee in 2009. This proforma was subsequently amended to meet the needs of the Vascular Department. From November 2010, all patients attending the Vascular Department for day-case surgical procedures 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, were additionally given a stat dose of LMWH after the procedure or prescribed LMWH to be self-administered for two weeks (decision made by the consultant in clinic). The completed questionnaires were kept in the Department and returned to the Quality Directorate for audit purposes.

This audit is based on the results from all completed questionnaires since the initiative began to the current day (November 2010 – January 2012)
### 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 Vascular Department 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>
</tr>
</tbody>
</table>

### VTE risk scores from questionnaires

![Bar chart showing VTE risk scores](image)

### Graph to show number of patients assessed at risk of VTE and prescribed prophylaxis

![Bar chart showing number of patients assessed at risk of VTE and prescribed prophylaxis](image)
All patients with a risk score of 3 or greater are considered to be at high risk for VTE. All these patients were discussed by the nurse with the clinic doctor. A clinical decision was made not to prescribe prophylaxis in 18 patients. The remainder were prescribed Dalteparin and counselled by the clinic nurse. No outcome on the decision of a patient with a risk score of 7 was recorded.

One patient did not want to self-inject, but she had had previous experience of having Dalteparin and at this time her neighbour had given her the injections, she asked her neighbour to do so again and this caused no problems. All other patients coped well with self-injecting.

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.

None of the patients who were assessed for their risk of VTE prior to vascular day-case surgical procedures were subsequently seen in the Anticoagulation Clinic.

One patient, at follow-up after treatment with EVLT, was found to have a tongue of clot extending from the LSV stump just to the sapheno-femoral junction. On review of the medical records, this was not thought to be of any significance by the Vascular Team.

Conclusions
The Vascular 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.

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ix Agnelli G. Prevention of Venous Thromboembolism in Surgical Patients. Circulation 2004: 110:1v-4-1v-12
doi:10.1161/01.CIR.0000150639.98514.6c
x Venous thromboembolism - reducing the risk (CG92) NICE, 2010