Guide for the Use of Thromboprophylaxis in Obese and Low Body Weight Patients

There is limited good evidence-based data to guide dosing of thromboprophylaxis in patients who are obese or of low body weight. Manufacturers’ information for enoxaparin, does not recommend dosage adjustments for extremes of body weight.

Obesity is a risk factor for the development of venous thromboembolism. Five out of seven studies investigating the association between obesity and postoperative DVT found significant association and two studies found no significant correlation. A pooled estimate was not possible due to different definitions for obesity across the studies.

**NICE Guidance (Venous Thromboembolism: Reducing the Risk 9)**

NICE used a definition of obesity as patients with a body mass index greater than or equal to 30 kg/m$^2$ but do not make any specific recommendations regarding low molecular weight heparins (LMWH) dosing in obese patients.

All obese patients should be classed as high risk for venous thromboembolism as they have at least one risk factor in addition to their surgery/medical condition, therefore the available evidence points towards higher LMWH dosing in this patient group.

Non-obese patients receiving enoxaparin 40mg daily receive a weight based dose of 0.4-0.8 mg/kg. If patients >100kg receive 40mg bd and patients >150kg receive 60mg bd they would be receiving a similar weight based dose to non-obese patients. See table 1.

**Table 1: Doses of LMWH for thromboprophylaxis**

<table>
<thead>
<tr>
<th>Oral anticoagulants</th>
<th>LMWH</th>
<th>eGFR &lt;30ml/min$^\dagger$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dabigatran*</td>
<td>No dose adjustments*</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Warfarin</td>
<td>Adjust dose according to patient INR</td>
<td></td>
</tr>
<tr>
<td>Phenindione</td>
<td>Adjust dose according to patient INR</td>
<td></td>
</tr>
<tr>
<td>Acenocoumarol</td>
<td>Adjust dose according to patient INR</td>
<td></td>
</tr>
</tbody>
</table>

$^\dagger$ Patients with eGFR <30ml/min should receive enoxaparin 20mg daily regardless of weight.$^5$

$^*$Dabigatran in patients <50kg or >110kg there is limited clinical and kinetic data hence no dose adjustment is recommended. Dabigatran is less protein bound and has a higher volume of distribution than rivaroxaban; therefore it is possible that extremes of body weight could have a greater effect on its pharmacodynamics. However, given the lack of clinical data in patients at extremes of body weight the manufacturer’s information should be followed and no dosage adjustment is required.$^6$

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For further information please call Medicines Information ☎ 3788
References
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(2) Edmonds MJR, Critchon TJH, Runciman WB, Pradham M. Evidence-based risk factors for post-operative DVT ANZ journal of surgery 2004 (12): 1082-97
(5) The Renal Handbook. 3rd Ed. 2009; 264-265
(6) Summary of product characteristics Pradaxa February 2012 www.emc.medicines.org.uk