BACKGROUND
Tinzaparin sodium (Innohep®) is one of the low-molecular-weight-heparins listed in the UHN Formulary. It is currently used at UHN for a number of clinical situations where treatment or prevention (see page 2) of venous thromboembolism (VTE), which includes deep vein thrombosis (DVT) and pulmonary embolism (PE), is required.

TREATMENT of DVT/PE: 175 units per kg actual body weight (ABW) once daily subcutaneously (SC).  
Note: To reduce the risk of injection site bruising, limit SC injections to the abdomen whenever possible.

Dosage Form
• For patients weighing 41 to 50 kg, 61 to 69 kg, 86 to 94 kg - use the 20,000 units per mL, 2 mL multidose vials and draw up the volume required for each dose in an insulin syringe with a 25 gauge, ½ inch needle.
• For other patient weights - use a preloaded syringe.

<table>
<thead>
<tr>
<th>Patients ABW</th>
<th>Dose (Volume Required)</th>
<th>Dosage Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 to 50 kg</td>
<td>8,000 units (0.4 mL)</td>
<td>multidose vial</td>
</tr>
<tr>
<td>(7,175 to 8,750 units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51 to 60 kg</td>
<td>10,000 units (0.5 mL)</td>
<td>10,000 units per 0.5 mL preloaded syringe</td>
</tr>
<tr>
<td>(8,925 to 10,500 units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 to 69 kg</td>
<td>12,000 units (0.6 mL)</td>
<td>multidose vial</td>
</tr>
<tr>
<td>(10,675 to 12,075 units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 to 85 kg</td>
<td>14,000 units (0.7 mL)</td>
<td>14,000 units per 0.7 mL preloaded syringe</td>
</tr>
<tr>
<td>(12,250 to 14,875 units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>86 to 94 kg</td>
<td>16,000 units (0.8 mL)</td>
<td>multidose vial</td>
</tr>
<tr>
<td>(15,050 to 16,450 units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>95 kg to 110 kg</td>
<td>18,000 units (0.9 mL)</td>
<td>18,000 units per 0.9 mL preloaded syringe</td>
</tr>
<tr>
<td>(16,625 to 18,000 units)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ABW (kg) x 175 units/kg = Dose (in units)
Injection volume - Dose (in units) ÷ 20,000 units/mL = _____ mL

Renal Failure (for patients with Creatinine Clearance less than 30 mL/min)
Switch to unfractionated heparin or titrate tinzaparin to peak anti-Xa level (0.8-1.2) @ 6 hours post SC administration.
Titrate up or down by 1,000 units to achieve anti-Xa level = 0.8-1.2

Laboratory Monitoring
Recommend:
• baseline - CBC, aPTT and/or Serum Creatinine
• day 3, day 7 and day 14 - CBC

Note: Routine anti-Xa level is NOT recommended. Discuss need with Hematology and/or Pharmacy.
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TINZAPARIN SODIUM (Innohep®)
DOSSING AND ADMINISTRATION GUIDELINES

PREVENTION of VTE in ACUTE SPINAL CORD INJURY PATIENTS: 65 to 75 units per kg actual body weight (ABW) once daily SC.

*Note:* To reduce the risk of injection site bruising, limit SC injections to the abdomen whenever possible.

**Dosage Form**
- For patients weighing 35 to 55 kg, 56 to 100 kg - use a preloaded syringe.
- For patients weighing greater than 100 kg - use the 20,000 units per mL, 2 mL multidose vials and draw up the volume required for each dose in an insulin syringe with a 25 gauge, ½ inch needle.

<table>
<thead>
<tr>
<th>Patient’s ABW</th>
<th>Dose (Volume Required)</th>
<th>Dosage Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-55 kg</td>
<td>3,500 units (0.35 mL)</td>
<td>3,500 units per 0.35 mL preloaded syringe</td>
</tr>
<tr>
<td>56-100 kg</td>
<td>4,500 units (0.45 mL)</td>
<td>4,500 units per 0.45 mL preloaded syringe</td>
</tr>
<tr>
<td>Greater than 100 kg</td>
<td>6,500 units (0.325 mL)</td>
<td>Multi-dose vial or 75 units/kg ABW</td>
</tr>
</tbody>
</table>

**Renal Failure** (for patients with Creatinine Clearance less than 30 mL/min)
Suggest switch to unfractionated heparin or decrease dose of tinzaparin by 40-50%.
Please contact Hematology and/or Pharmacy for other dosing considerations or anti-Xa levels.

**Laboratory Monitoring**
Recommend:
- baseline - CBC, aPTT and/or Serum Creatinine
- day 3, day 7 and day 14 - CBC

*Note:* Routine anti-Xa level is NOT recommended. Discuss need with Hematology and/or Pharmacy.

**TINZAPARIN PRIMARY USES AT UHN**

- Treatment of DVT/PE
- VTE prophylaxis in Acute Spinal Cord Injury
- VTE prophylaxis in Spine Surgery

Prepared by: John Murdoch, BScPhm - September 2003
Reviewed by: Jin-Hyeun Huh, BScPhm, Erik Yeo, MD, Hematology, Bill Brien, MD, Hematology - September 2003
Updated by: Katie Palmer, BScPhm - September 2012
Reviewed by: John Murdoch, BScPhm, Jin-Hyeun Huh, BScPhm - September 2012
Approved by: Pharmacy & Therapeutics Committee - October 2012; Medical Advisory Committee - November 2012
Cardiovascular Drugs and Therapies
ANTICOAGULANTS

TINZAPARIN SODIUM (Innohep®)
DOSING AND ADMINISTRATION GUIDELINES

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The contents of this Handbook are approved and endorsed by the UHN Cardiovascular Subcommittee of the Pharmacy and Therapeutics Committee.

1. Purpose of the Pharmacotherapy Handbook.

Notice to Healthcare Providers:

The Pharmacotherapy Handbook is intended to be used as a tool to aid in the appropriate prescribing and administration of cardiovascular formulary agents.

This information in this Handbook is intended for use by and with experienced physicians and pharmacists. The information is not intended to replace sound professional judgment in individual situations, and should be used in conjunction with other reliable sources of information. Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about Cardiovascular illness and the treatments in question.

Due to the rapidly changing nature of cardiovascular treatments and therapies, users are advised to recheck the information contained herein with the original source before applying it to patient care.

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