Cardiac Diseases and Therapies

ANTICOAGULANTS

TINZAPARIN SODIUM (Innohep®)

DOsing and Administration Guidelines

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 of venous thromboembolism (VTE), which includes deep vein thrombosis (DVT) and pulmonary embolism (PE), is required (see page 2).

A: 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 more than 110 kg, use the 20,000 units per mL 2 mL multidose vials and draw up 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>8,000 units per 0.4 mL preloaded syringe</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>61 to 69 kg</td>
<td>12,000 units (0.6 mL)</td>
<td>12,000 units per 0.6 mL preloaded syringe</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>86 to 94 kg</td>
<td>16,000 units (0.8 mL)</td>
<td>16,000 units per 0.8 mL preloaded syringe</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>Greater than 110 kg</td>
<td>ABW (kg) x 175 units/kg = Dose (in units) Injection volume - Dose (in units) ÷ 20,000 units/mL = _____mL</td>
<td>Multidose vial</td>
</tr>
</tbody>
</table>

Renal Failure: (for patients with Creatinine Clearance less than 30 mL per minute) Switch to unfractionated Heparin or titrate Tinzaparin to peak anti-Xa level (0.8-1.2) at 6 hours post SC administration. Titrate up or down by 1,000 units to achieve Anti-Xa level = 0.8-1.2

Laboratory monitoring:

Recommended baseline CBC, aPTT and/or Serum Creatinine day 3, day 7 and day 14 CBC Routine anti-Xa level is NOT recommended. Discuss need with Hematology and/or Pharmacy.
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B. Prevention of VTE in Acute Spinal Cord Injury Patients:

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

**Dosage Form:** For patients weighing 35 to 100 kg, use appropriate preloaded syringe as outlined in table below. For patients weighing greater than 100 kg, use the preloaded syringe if dose is 8,000 units, otherwise use multidose vial (20,000 units per mL, 2 mL multi-dose vials) and draw up 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>35-50 kg</td>
<td>3,500 units (0.35 mL)</td>
<td>3,500 units per 0.35 mL preloaded syringe</td>
</tr>
<tr>
<td>51-100 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>8,000 units (0.4 mL) or 75 units/kg ABW</td>
<td>8,000 units per 0.4 mL preloaded syringe or multi-dose vial</td>
</tr>
</tbody>
</table>

**Renal failure:** (for patients with Creatinine Clearance less than 30 mL per minute)
Suggest switch to unfractionated Heparin if prophylaxis is longer than 10 days.
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
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 |

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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.

Notice to non-Healthcare Providers:

Not Medical Advice. The information contained in the Handbook is not a substitute for professional medical advice, diagnosis or treatment. Never make changes to your medication, nor adjust your dose, without first consulting your health care provider. Always seek the advice of a physician or other qualified healthcare provider concerning questions you have regarding a medical condition, and before starting, stopping or modifying any treatment or medication. Never delay obtaining medical advice or disregard medical advice because of something you have or have not read in the Handbook. If you have, or suspect you have, a health problem, or if you experience an adverse side effect, please consult your doctor. If you have, or suspect you are experiencing a health emergency, please call 911 and/or promptly visit a Hospital Emergency Department in your area.

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Your comments on the usefulness of the resources contained in the Handbook are welcomed and may be forwarded to Amita Woods, Department of Pharmacy Services (amita.woods@uhn.ca).