PROTAMINE SULPHATE

Class: Antidote

Indications: Treatment of heparin overdosage; neutralize heparin during surgery or dialysis procedures

Unlabeled: Treatment of low molecular weight heparin (LMWH) overdose

Available dosage form in the hospital: 10MG/ML AMP.

Dosage:

- Heparin neutralization: I.V.: Protamine dosage is determined by the dosage of heparin; 1 mg of protamine neutralizes ~100 units of heparin; maximum dose: 50 mg

  Note: When heparin is given as a continuous I.V. infusion, only heparin given in the preceding several hours should be considered when administering protamine. For example, a patient receiving heparin at 1250 units/hour will require ~30 mg of protamine for reversal of heparin given in the last 2-2.5 hours.

- Heparin overdosage, following intravenous administration: I.V.: Since blood heparin concentrations decrease rapidly after administration, adjust the protamine dosage depending upon the duration of time since heparin administration as follows: See table.

<table>
<thead>
<tr>
<th>Time Elapsed</th>
<th>Dose of Protamine (mg) to Neutralize 100 units of Heparin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>1-1.5</td>
</tr>
<tr>
<td>30-60 min</td>
<td>0.5-0.75</td>
</tr>
<tr>
<td>&gt;2 h</td>
<td>0.25-0.375</td>
</tr>
</tbody>
</table>

- Heparin overdosage, following SubQ injection: I.V.: 1-1.5 mg protamine per 100 units heparin; this may be done by a portion of the dose (eg. 25-50 mg) given slowly I.V. followed by the remaining portion as a continuous infusion over 8-16 hours (the expected absorption time of the SubQ heparin dose)

- LMWH overdose (unlabeled use): I.V.: Note: Anti-Xa activity is never completely neutralized (maximum: ~60% to 75%). Excessive protamine doses may worsen bleeding potential.

Enoxaparin:

- Enoxaparin administered in ≤8 hours: Dose of protamine should equal the dose of enoxaparin administered. Therefore, 1 mg of protamine sulfate neutralizes 1 mg of enoxaparin.

- Enoxaparin administered in > 8 hours or if it has been determined that a second dose of protamine is required (eg, if aPTT measured 2-4 hours after the first dose remains prolonged or if bleeding continues): 0.5 mg of protamine sulfate for every 1 mg of enoxaparin administered

Dalteparin or tinzaparin: 1 mg protamine for each 100 anti-Xa units of dalteparin or tinzaparin; if PTT prolonged 2-4 hours after first dose (or if bleeding continues), consider additional dose of 0.5 mg for each 100 anti-Xa units of dalteparin or tinzaparin.


Pregnancy Risk Factor: C