Impella Device – Heparin Protocol

Purge Impella Heparin:
Product: Dextrose 5% with Heparin 25,000 units / 500mL (50 units/mL) continuous via Impella device
Dose: 2-30 mL/hour
Dose Adjustment: Impella device will self-regulate the rate. Do not adjust rate.

Systemic Impella Heparin:
Product: Heparin 25,000 units / 250mL (100 units/mL)
Initial Dose: 300 units / hour
Dose Adjustment: RN to maintain goal ACT range per Impella Heparin Protocol

<table>
<thead>
<tr>
<th>ACT (seconds)</th>
<th>Heparin dose adjustment</th>
<th>Repeat ACT in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 160</td>
<td>Increase by 100 units / hour</td>
<td>1 hour</td>
</tr>
<tr>
<td>160 - 180</td>
<td>No change</td>
<td>1 hour x 2 consecutive, then every 4 hours</td>
</tr>
<tr>
<td>181 - 200</td>
<td>Decrease by 100 units / hour</td>
<td>1 hour</td>
</tr>
<tr>
<td>Greater than 200</td>
<td>Decrease by 200 units / hour, Notify covering physician</td>
<td>1 hour</td>
</tr>
</tbody>
</table>

Notify Physician for any of the following:
- Therapeutic range is not achieved after 2 adjustments
- If patient exhibits signs or symptoms of bleeding including, but not limited to:
  - Frank bleeding from any site
  - New onset severe headache
  - New onset flank or abdominal pain
  - Change in mental status
  - Sudden increase in heart rate or decrease in blood pressure
  - Decrease in hemoglobin greater than 2 grams from baseline or last CBC
- If patient exhibits signs or symptoms of thrombosis including, but not limited to:
  - New onset or acute worsening of leg pain or swelling
  - New onset or acute worsening of shortness of breath, decreased oxygen saturation, or cyanosis
  - New onset or acute worsening of chest pain
  - Change in mental status
- If patient exhibits signs or symptoms of heparin induced thrombocytopenia including, but not limited to:
  - Platelets decrease by 50% from baseline or to less than 100,000
  - Ischemic digits