IVIG Educational Presentation

Administration of IVIG direct from the Bottle

Note:
This is not the procedure please refer to the procedure in ePOPS
Change in Practice

• **Discontinuation** of “pooling IVIG”
• Transfusion Medicine Laboratory (TML) will issue IVIG in a bottle

Why?

• Best practice, pooling of IVIG is no longer indicated.

Note:

• No change in practice for NICU
  • TML will continue to issue IVIG in a syringe for NICU
• IVIG doses up to 5g, 50mL, can be issued in a syringe.
Key Points 1

• **Refer** to volumetric procedure
• **Infuse** via a vented infusion set
• **Avoid** shaking the bottle to minimize bubbling
• **Infuse** IVIG within 4 h of spiking the bottle
• **Start** with the smallest bottle first
• Some patients do not tolerate IVIG at the maximum infusion rate.
Issues to Consider

• Some patients do not tolerate IVIG at the maximum infusion rate, e.g. patients:
  • receiving IVIG for the first time
  • receiving high-dose IVIG i.e. >1gr/kg
  • with auto-immune disorders e.g. Kawasaki's
  • who have reacted to IVIG previously

• Review transfusion history with patient/caregiver; ask if patient has ever experienced adverse reactions to IVIG.

• If patient has experienced previous adverse reactions, inform physician and consider slower maximum infusion rate and medication pre-during and post IVIG infusion.
Calculations

• **Calculate** total volume to be infused
  • 1 Gram = 10 mL

• **Calculate** total volume that can be infused in 4 hours
  • **Refer** to relevant IVIG Rate Table

• **Decide** if you want the IVIG in syringe or bottle:
  • doses up to 5g, 50mL, can be issued in a syringe
  • available in 2.5g, 5g, 10g & 20g bottles

**Note:**

• The total volume infused in the first 4 hours will be lower than subsequent 4 hours because the initial slower infusion rates.
Communicate with TML

• **Inform** TML if you require the IVIG in a syringe or bottle.
  • IVIG doses up to 5g, 50mL, can be issued in a syringe.
• **Inform** TML of maximum volume that can be infused in first 4 hours and subsequent 4 hour time frames.
• TML round up to the nearest bottle size available, **administer** the **prescribed volume**.
• TML will issue total volume, up to 50g, at the time of request.
Key Points 2

• If the transfusion is temporally delayed unopened bottles can be held in the patient care location until the transfusion can start.

• **Complete** transfusion within 4 hours of spiking the bottle.

• **Consult** TML if there are concerns about completing the transfusion within the four hour time limit.

• **Return** all unopened bottles, with boxes, to TML promptly, if the transfusion is cancelled.
Checking Procedure

• **Check** one bottle of IVIG at a time & immediately prior to spiking the bottle.

• **Check** for:
  - particulate matter
  - tampered cap
  - turbidity
  - abnormal colour

• IVIG that appears abnormal should not be transfused without further investigation.

• **Contact** TML at 7388 for an explanation of abnormal appearance.
Initiation of the Transfusion

• **Start** with the smallest bottle.
• **Avoid** shaking the bottle.

1. **Clamp** the line.
2. **Flip** off plastic cap on top of the bottle and expose rubber stopper.
3. **Clean** the exposed rubber stopper for 30 seconds and leave to dry for 1 minute.
4. **Place** bottle on a flat surface.
Initiation of the Transfusion

5. **Insert** the spike into the area delineated by the raised ring in the center of rubber stopper at a 90° angle.

6. **Invert** bottle immediately and gently squeeze and release drip chamber to fill to 2/3 before you open the vent to establish flow.
   • **Ensure** vent is closed any time you spike a new bottle. If the vent is open, fluid could wet the vent, resulting in slow or blocked flow and possible air bubble formation in the tubing.

7. **Program** the pump to deliver the required volume.

8. **Confirm** the programmed rate and volume to be infused

Key Points 3

• **Do not** shake the bottle.

• **Do not** open the vent during drip chamber filling, because fluid could wet the vent, resulting in slow or blocked flow and possible air bubble formation in the tubing.

• **Do not** tamper with the vent or use needle as an air inlet.

• **Discontinue** the infusion and inform TML if there is any leaking from around the spike site.

• TML round up to the nearest bottle size available, administer prescribed volume.
# IVIG Infusion Rate Table for all Products

<table>
<thead>
<tr>
<th>Start Rate 1&lt;sup&gt;st&lt;/sup&gt; 30 min</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; 30 min</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; 30 min</th>
<th>Maximum Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 mL/kg/h</td>
<td>1mL/kg/h</td>
<td>2 mL/kg/h</td>
<td>4 mL/kg/h, or 200 mLs/h, whichever comes first</td>
</tr>
</tbody>
</table>

If initial infusion rate is well tolerated, increase the rate of the infusion at 30 min intervals.

⚠️ For patients with **renal dysfunction** or at **risk of renal dysfunction** infuse at lowest rate possible, **maximum rate should not exceed 2 mL/kg/h**.

⚠️ **Slower** infusion rates may reduce rate related adverse reactions.

## Measure Vital signs:

<table>
<thead>
<tr>
<th>Vital signs include:</th>
<th>Heart rate</th>
<th>Blood Pressure</th>
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</thead>
<tbody>
<tr>
<td>After 15 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Prior</strong> to each rate increase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 minutes <strong>after</strong> introducing a new lot number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hourly once maximum rate is achieved</td>
<td></td>
<td></td>
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<tr>
<td>Within 60 min of completion of the infusion</td>
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<table>
<thead>
<tr>
<th>Temperature</th>
<th>Respiration rate</th>
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Subsequent Bottles

If a second bottle is required:

• **Start** the infusion at the highest rate achieved in the previous bottle e.g. if the rate was 50 mL/h start new bottle at 50 mL/h.

• When introducing new lot numbers, it is not necessary to reduce the infusion rate.

• **Change** the administration set when the ENTIRE transfusion is complete or after 12 hours, whichever comes first.
Completion of Transfusion

• If the full bottle is ordered:
  • **Flush** the administration set with D5W
  • **Disconnect** the line

**OR**

• When the prescribed volume has infused:
  • **Stop** the infusion
  • **Flush** connection tubing
  • **Disconnect** the line

• **Use** minimum volume flush for fluid restricted patients.
Summary

• Avoid shaking the bottle.
• Infuse via a vented infusion set.
• Start with the smallest bottle first.
• Infuse IVIG within 4h of spiking the bottle.
• When introducing new lot numbers, it is not necessary to reduce the infusion rate.
• TML round up to the nearest bottle size available, administer the prescribed volume.