CHANGING AN INTRAVENOUS CATHETER TO AN INTERMITTENT INFUSION LOCK  continued

- Expose the IV catheter hub and loosen any tape that is holding the IV tubing in place or that will interfere with insertion of the intermittent infusion plug into the catheter.
- Clamp the IV tubing to stop the flow of IV fluid.
- Open the alcohol wipe and intermittent infusion plug, leaving the plug in its sterile package.

2. Remove the IV tubing and insert the intermittent infusion plug into the IV catheter.
   - Put on gloves.
   - Stabilize the IV catheter with your nondominant hand and use the little finger to place slight pressure on the vein above the end of the catheter. Twist the IV tubing adapter to loosen it from the IV catheter and remove it, placing the end of the tubing in a clean emesis basin.
   - Pick up the intermittent infusion plug from its package and remove the protective sleeve from the male adapter, maintaining its sterility. Insert the plug into the IV catheter, twisting it to seat it firmly or engage the Luer lock.

3. Instill saline or heparin solution per agency policy.  **Rationale:** Saline or heparin are used to maintain patency of the IV catheter when fluids are not infusing through the catheter.
4. Tape the intermittent infusion plug in place using a chevron or U method.  **Rationale:** Tape provides added security to prevent the infusion plug from coming out of the intravenous catheter. It also promotes comfort, preventing the plug from catching on clothing or bedding.
5. Teach the client how to maintain the lock.
   - Avoid manipulating the catheter or infusion plug and protect it from catching on clothing or bedding. A gauze bandage such as Kerlix or Kling may be wrapped over the plug when it is not in use to protect it.
   - Cover the site with an occlusive dressing when showering; avoid immersing the site.
   - Flush the catheter with saline or heparin solution as directed.
   - Notify the nurse or primary care provider if the plug or catheter comes out; if the site becomes red, inflamed, or painful; or if any drainage or bleeding occurs at the site.

**EVALUATION**

Evaluate the following:
- Patency of the catheter
- Appearance of the site
- Ease of flushing

**Blood Transfusions**

Intravenous fluids can be effective in restoring intravascular (blood) volume; however, they do not affect the oxygen-carrying capacity of the blood. When red and white blood cells, platelets, or blood proteins are lost because of hemorrhage or disease, it may be necessary to replace these components to restore the blood’s ability to transport oxygen and carbon dioxide, to clot, to fight infection, and to keep extracellular fluid within the intravascular compartment. A blood transfusion is the introduction of whole blood or blood components into the venous circulation.

**BLOOD GROUPS.** Human blood is commonly classified into four main groups (A, B, AB, and O). The surface of an individual’s red blood cells contains a number of proteins known as **antigens** that are unique for each person. Many blood antigens have been identified, but the antigens A, B, and Rh are the most important in determining blood group or type. Because antigens promote **agglutination** or clumping of blood cells, they are also known as **agglutinogens.** The A antigen or agglutinin is present on the RBCs of people with blood group A, the B antigen is present in people with blood group B, and both A and B antigens are found on the RBC surface in people with group AB blood. Neither antigen is present in people with group O blood.

Preformed **antibodies** to RBC antigens are present in the plasma; these antibodies are often called **agglutinins.** People with blood group A have B antibodies (agglutinins); A antibodies are present in people with blood group B; and people with blood group O have antibodies to both A and B antigens. People with group AB blood do not have antibodies to either A or B antigens (Table 52–11). When blood is transfused, the blood

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**TABLE 52–11  The Blood Groups with Their Constituent Agglutinogens and Agglutinins**

<table>
<thead>
<tr>
<th>BLOOD TYPES</th>
<th>RBC ANTIGENS (AGGLUTINOGENS)</th>
<th>PLASMA ANTIBODIES (AGGLUTININS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>B</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>AB</td>
<td>A and B</td>
<td>A and B</td>
</tr>
<tr>
<td>O</td>
<td>—</td>
<td>A and B</td>
</tr>
</tbody>
</table>