PROCEDURE: VENIPUNCTURE AND CENTRIFUGATION

Medical supplies

- Disposable gloves;
- Tubes;
- Tourniquet;
- Antiseptics / Disinfectant (Alcohol);
- Gauze;
- Band-Aid or tape;
- Needle;
- Needle holder;
- Sharps container (used needles);
- Biohazard waste container (contaminated with biological substances);
- Biohazard bag.
- All other necessary supplies for blood drawing.

Preparation

1) Steps described in this procedure are based on instructions included in the manual published by OPTMQ (Ordre Professionnel de Technologistes médicaux du Québec) entitled : Prélèvement de sang par ponction veineuse pour fins d’analyse, fifth edition, section 7;
2) This procedure implies that you are familiar with specimen collection techniques;
3) Specimens must be collected, prepared (if required) and stored correctly in order to ensure their stability.

Collection

1) Prepare all the documents related to the analysis. Make sure that :
   - You understand the requisition;
   - You have all the documents pertinent to this request;
   - You can clearly read the following information on the requisition :
     - First and last name of the patient;
     - Date of birth;
     - Identification number (file, Medicare number, etc.);
     - The name of the doctor requesting the tests and/or clinic;
     - The requested tests;
     - Clinical information.
   - Indicate the phlebotomist’s name or initials on the requisition and include the specimen collection date and time.
2) Prepare the necessary medical supplies (consult the CDL catalogue or contact the laboratory for test information);
3) Call the patient by their first and last name :
   - Introduce yourself (name);
   - Verify the patient identification:
     - His/her name;
     - His/her date of birth.
   - Ask the patient if he or she agrees to proceed with the sample collection (legal aspect).
4) Inform and reassure the patient:
   - Explain the procedure;
   - Check to see if the patient has had any adverse reactions (e.g., fainting) with previous phlebotomies;
   - Inform the patient of the possibility of experiencing some discomfort during the specimen collection process.
   - Do not provide technical information to the patient regarding diagnostic testing. For any technical information, refer to a technician.

5) Ensure that the requirements for the analysis are followed:
   - Special dietary instructions (fasting, special diet restrictions, etc.);
   - Sample collection at specific time or interval;
   - Special indications.

6) Wash your hands and put on gloves;

7) Seat the patient comfortably in the phlebotomy chair;

8) Assess the puncture site;

9) Install a tourniquet;

10) Choose the vein;

11) Clean the area with the appropriate disinfectant;

12) Perform the venipuncture and collect the appropriate specimen(s) in order (refer to the table below);

**ORDER OF SPECIMEN COLLECTION**

<table>
<thead>
<tr>
<th>Order</th>
<th>Type of tube</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hemoculture</td>
<td>Preservative aerobic, anaerobic</td>
</tr>
<tr>
<td>2</td>
<td>Light Blue</td>
<td>Sodium Citrate (Coagulation), liquid</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>Clot activator</td>
</tr>
<tr>
<td>4</td>
<td>Yellow(Gel)</td>
<td>Clot activator and serum separating gel</td>
</tr>
<tr>
<td>5</td>
<td>Green</td>
<td>Heparin Sodium</td>
</tr>
<tr>
<td>6</td>
<td>Dark Blue</td>
<td>K₂ EDTA-10.8mg</td>
</tr>
<tr>
<td>7</td>
<td>Lavender</td>
<td>EDTA K₂</td>
</tr>
<tr>
<td>8</td>
<td>Pink</td>
<td>EDTA K₂ 3.6mg</td>
</tr>
<tr>
<td>9</td>
<td>Grey</td>
<td>Potassium Oxalate / Sodium Fluoride</td>
</tr>
<tr>
<td>10</td>
<td>Black</td>
<td>Sedimentation, Sodium Citrate, liquid</td>
</tr>
<tr>
<td>11</td>
<td>Pale Yellow</td>
<td>ACD Solution</td>
</tr>
</tbody>
</table>

13) Remove the tourniquet when there is adequate blood flow;

14) Make sure tubes are completely filled;

15) Remove the needle from the vein;

16) Cover the venipuncture site with a clean gauze pad, apply a Band-Aid or tape to the site, and tell the patient to apply pressure to the site for 1-2 minutes;

17) Throw away all contaminated supplies used for the venipuncture in a biohazard waste container or sharp container;

18) Invert the tubes **5 times for gel (serum) tube and 10 times for all others (lavender, light blue...)** in order to mix the blood with the additive;

19) In front of the patient, identify the sample with the following information:
   - First and last name;
   - Date of birth and/or Medicare number.

**Note: Any specimen that is not properly identified will not be accepted by the laboratory.**

20) Handle tubes according to the requirements for preparation and storage (e.g., centrifugation, etc.). See centrifugation instructions below.

21) Place the tubes in the biohazard bag and seal;

22) Insert the requisition in the side pocket of the biohazard bag;
23) If no other tests are required for this patient you can inform him/her that the dietary restrictions are now over;
24) Take off your gloves and wash your hands;
25) Send all samples to the laboratory as soon as possible.

**Centrifugation**

1) Place tubes in an upright position, and allow blood to clot thoroughly before centrifugation. Clotting time for non anticoagulant tubes is 30 minutes.
2) Place tubes to be centrifuged in the sample holders or racks. Opposite tubes must be of the same weight. A tube of water can be used as a counterbalance. Smaller tubes are often too short to place directly in the rotor. A rubber stopper must be added in order to provide support.
3) Select the desired speed and the length of time. The temperature of centrifugation may also be selected for certain centrifuges.

<table>
<thead>
<tr>
<th>CENTRIFUGATION TIME FOR BENCHTOP CENTRIFUGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube</td>
</tr>
<tr>
<td>Blood samples (SST, red, etc.)</td>
</tr>
<tr>
<td>Light blue and lavender tubes for coagulation testing</td>
</tr>
</tbody>
</table>

To determine the required rpm for a specific centrifuge, measure the radius of the centrifuge (in cm) and use the required RCF from the table above. See example below.
4) Close and lock the lid and press the start button.
5) Open the centrifuge lid after it has come to a complete stop.
   Note: In case of a tube breaking in the centrifuge, an emergency stop can be performed. Wait at least 30 minutes before opening the lid. Wear gloves before handling the broken pieces. Remove the rotor sample basket and clean with a 2% solution of Glutaraldehyde followed by a rinse with water. Discard the broken tube in a biohazard waste container.
6) Remove the tubes from the centrifuge and return to step 20 above.