Blood culture collection

Material

- Sterile gloves
- Adult or paediatric aerobic and anaerobic BacTAlert® blood culture bottles
- Tourniquet
- Collection set (Vacutainer collection set)
- 2.0% chlorhexidine-alcohol or 70% alcohol swabs

Methods

- Wash and dry hands.
- Put on sterile gloves.
- Prepare the skin for venepuncture.
- Palpate for a vein to locate the venepuncture site.
- Beginning in the centre of the area and moving outward in concentric circles, swab the site with
    - 2% chlorhexidine-70% alcohol (wait 30-60s to dry); **or**
    - 70% alcohol (wait 30-60s to dry) – for those with known reaction to chlorhexidine.
- Without repalpating for the vein perform the venepuncture.
- Remove the cap of the blood culture bottle.
- Cleanse the septum with 70% alcohol.
- Allow to dry before inoculation.
- Adults: Inoculate **8 to 10ml** of blood into **each** blood culture bottle for adult bottles. Do not exceed 10ml per bottle. Paediatric: **0.5ml to 4mlfrom children** in Paediatric bottles. Do not exceed 4ml. Both aerobic (green or yellow capped) and anaerobic (orange capped) bottles should be directly inoculated at the bedside.

  Use the Vacutainer system with the adaptor for the BacTAlert blood culture bottles.

    - **If a syringe and needle is used instead of the Vacutainer system, there is *no need* to changethe needle** before inoculating the bottle culture bottle. However, **avoid** holding the bottle with one hand while inserting the needle with the other, to avoid needlestick injury.
- If blood is taken for other investigations, always **inoculate the blood culture bottle first**, as other blood tubes are known to harbour potential contaminants on occasion. Inoculate aerobic before anaerobic bottle.
- As the needle is removed from the patient's arm, apply pressure with a gauze pad, and ask the patient to hold the pad tightly in place for 2-3mins.
- Remove the needle from the last bottle, and discard the collection set.
- **Discard needle immediately and do not attempt to recap the needles at any point.**

Summary of BacT/Alert® Bottles for Blood Culture

BacT/Alert® Bottles	Colour Code of Bottle Cap	Indicated for
1. BacT/Alert® FA Plus	Green	Aerobic and/or yeast culture
2. BacT/Alert® FNn Plus	Orange	Anaerobic culture
3. BacT/Alert® PF Plus	Yellow	Aerobic culture for pediatrics

Labelling

- Label the specimen with patient information. The sticky label should NOT be pasted over the bottle barcode.
- Indicate the time of collection and the site, including any intravascular device through which it is taken.
- Note whether the patient is on antibiotics on request form.
- Include clinical details and suspected diagnosis on the request form.

Transport

- Do not refrigerate the specimen. Hold it at room temperature. Transport the specimen to the laboratory immediately. The laboratory is open 24hours to receive bottles for incubation.

Timing and number of cultures

- One set of blood cultures = One aerobic bottle (8 - 10ml blood) AND one anaerobic bottle (8 - 10ml blood)
- Blood cultures should be collected preferably before antibiotic administration; before or during a predicted fever spike; or any time sepsis is suspected.
- The volume of blood taken is more important than the timing of blood drawn – you can take 2 blood cultures within 30 mins; it is not necessary to space out the timing of each blood culture, but separate sets of blood culture should be drawn from different venepuncture sites.
- Endocarditis: draw 3 culture sets from 3 different sites. If patient had been on antibiotics during the past 2 weeks, or if prosthetic valve endocarditis is suspected, draw another 3 cultures the next day.
- Intravascular infections: draw 3 culture sets. Draw two sets as a pair with one set from the suspected source (Intravascular catheter, or centralintravascular line), and another set from a separate venipuncture.
- Other forms of sepsis (e.g. acute sepsis, meningitis, osteomyelitis, septic arthritis, pneumonia): draw 2-3 culture sets.

Comments

- Blood for culture should not be withdrawn through an in dwelling intravenous or intra-arterial catheter unless it cannot be obtained by venepuncture, or if line sepsis is suspected.
- A second set of cultures may help to predict the clinical significance of isolate(s).
- A single aerobic culture is acceptable for paediatric cases, only when there is insufficient blood. Do not send a single unpaired anaerobic bottle.
- Fungal blood cultures: Candida spp. and Cryptococcus spp. can grow in the usual blood culture bottles; special fungal blood culture media is required for systemic fungi like histoplasmosis.