

CLINICAL SKILLS: MANAGING NEUTROPAENIA

Neutropaenic sepsis is a very serious complication of bone marrow failure. It can be related to the use of chemotherapy, or for a primary bone marrow problem. Regardless, it can have a mortality of between 2-21%, and requires strict infection control measures.

On this page we are focusing on neutropaenia and reducing the risk of developing infection. OSCE scenarios may include counselling patients about their condition, or discussing the management with other healthcare professionals. We have also included some information about the management of neutropaenic sepsis.

OSCE Scenario:

You have a patient on your general ward who is being treated for leukaemia. You just check his blood results, and see his neutrophil level is 0.01. Please discuss the next steps with the nurse who is looking after him.

- Introduce yourself to the nurse and explain that you are concerned about a patient
- Tell nurse the patient's name, DOB and hospital number
- Explain that he has a new onset neutropaenia and so is at an increased risk of infections
- Explain to the nurse that they will need special infection control measures to be started urgently, in the form of strict "reverse-barrier nursing"
- Advise the nurse that the patient needs to move to a side room (preferably "a **positive pressure side room**")
- Check with the nurse that they are familiar with reverse-barrier nursing. Emphasise that:
 - Everyone should wash their hands before entering
 - Gloves, aprons, masks should be stored in the room and put on whenever anyone enters
 - Gloves, aprons and masks should be kept on until the visitor/professionals are outside the room
 - No visitors with active infection should be allowed in the room
- Emphasise the need to take vital observations (temp, pulse rate and BP) **now** and every 4 hours onwards, and that they should bleep you if there are any abnormalities
- Emphasise general measures to reduce risk of infection:
 - After defecation, ensure good hygiene of the perianal area
 - Use chlorhexidine to wipe over moist skin areas (write on prescription chart)
 - Give hydrogen peroxide mouth washes required every 2 hours (write on prescription chart)
 - Only allow low infection risk food only, with no fresh flowers
- Explain that you may need to prescribe prophylactic medications (e.g. anti-fungal treatments)
- Ask if they have any other questions, and give you name and bleep number in cases of any problems
- Advise the nurse that the infection control team is a good source of information about the reverse barrier nursing.
- **Ask them to bleep you if he is febrile (>38°C) or with any other signs of sepsis**

Neutropaenic sepsis

- If showing signs of sepsis, then a full septic screen needs to be carried out
 - Collect a stool sample when possible
 - Collect a urine sample please
 - Collect a sputum sample please
 - Take a swab of any ulcers or wounds
- The patient will need a full medical examination for sources of sepsis
- Blood sample (U&Es, LFTs inc. albumin, FBC, CRP, Clotting) and blood cultures would need to be taken, along with an arterial or venous blood gas for **lactate**
- Additional blood cultures would need to be taken from any central venous lines
- A **portable** chest radiograph would need to be arranged if there are any respiratory signs on examination
- It would be reasonable to start empirical antibiotics dependent on local Trust guidelines (NICE guidelines recommend Piperacillin-Tazobactam if not penicillin allergic), and discussion with the local microbiology team would assist choice.

With thanks to FSHero