

SUSPECTED NEUTROPENIC SEPSIS PATHWAY

Neutropenic sepsis is a medical emergency.

- Has the patient had chemotherapy within the last month? OR do they have other risk factors for neutropenia? – see page 3 for more details on patients at risk or look for a **Lorenzo alert**.
- Is the patient presenting with a fever or signs of infection?

If the answer to these two questions is YES, then treat for neutropenic sepsis immediately until proven otherwise using the following algorithm. It is safer to give the first dose of antibiotics than to wait for the blood results. **Antibiotics must be given within 1 hour** of arrival/development of symptoms (if patient is already an inpatient) regardless of severity of symptoms as patients with neutropenic sepsis can deteriorate very rapidly, and **failure to treat promptly can result in death**.

Is the patient shocked?

Systolic BP <100mmHg **OR** Heart rate >100 **OR** Mean arterial BP <60mmHg **OR** drop in BP of 40mmHg from baseline **OR** Clinical concern.

IF SHOCKED SEEK URGENT SENIOR ADVICE REGARDING RESUSCITATIVE MEASURES.

<http://icid/MedicinesManagement/Guidance/AntimicrobialMedicine/Documents/sepsis%20six%20pathway.pdf>

STEP ONE

- Seek urgent IV access, unless patient has a central or peripheral line in situ that can be used
- Take bloods to include FBC, U&E, LFTs, bone profile and blood cultures. Cultures should be taken peripherally **AND** from any central or peripheral lines in situ.

STEP TWO

- Administer IV antibiotics as per the neutropenic sepsis protocol (below).
- **If the patient is shocked then add in gentamicin 5mg/kg STAT dose. Creatinine clearance should be calculated within the next 24 hours and used to inform the decision on further doses. Max dose 500mg**
- Consider adding in **vancomycin** (or substituting it for teicoplanin) if there is evidence of a skin/soft tissue infection in a known **MRSA +ve patient**. Consider IV fluids if clinically dehydrated.

No history of penicillin allergy

Piperacillin/Tazobactam
(Tazocin) 4.5g IV 6 hourly

+ Gentamicin 5mg/kg stat dose
if patient is shocked.
Max dose 500mg

History of non-severe penicillin allergy

Ceftazidime 2g IV 8 hourly

+ Gentamicin 5mg/kg stat dose
if patient is shocked.
Max dose 500mg

History of SEVERE penicillin allergy

Teicoplanin 6mg/kg IV (rounded up to nearest 100mg) 12 hourly for 3 doses and then 24 hourly **AND** aztreonam 2g IV 8 hourly

+ Gentamicin 5mg/kg stat dose
if shocked. Max dose 500mg

IN ALL CASES of confirmed neutropenic sepsis or febrile neutropenia the on-call consultant haematologist (or SpR) must be informed. **EITHER** – phone on-call consultant haematologist (or SpR) between 9-5pm, or 24hrs a day if patient unstable/ clinical concerns. **OR** – phone 9am next morning if patient stable.

This page should be printed and incorporated into the patient's medical records.

Patient name

Patient hospital number Date of Birth

Patient's location

Time of admission/new fever	
Time first dose of antibiotics prescribed	
Time first dose of antibiotics administered	
Antibiotic(s) given:	

Complete this section ONLY if neutropenia confirmed (neutrophils <1.0)

MASCC Score:	MASCC score 21 or greater = LOW risk MASCC score 20 or below = HIGH risk See below for information on scoring	
Which consultant has been contacted?	Date & Time:	

MASCC Score

Burden of illness (symptom severity)*	No/mild symptoms = score +5	Moderate symptoms = score +3	Severe symptoms = score 0
Hypotension (SBP <90mmHg)	Moderate = score +3		Severe = score 0
History of COPD	No = score +4		Yes = score 0
Underlying cancer diagnosis	Solid tumour = score +4	Haematological, no prior fungal infection = score +4	Haematological, prior fungal infection = score 0
Dehydration requiring IV fluids	No = score +3		Yes = score 0
Status at onset of fever	Outpatient = score +3		Inpatient = score 0
Age	<60 = Score +2		60 or >60 = score 0

*As determined by the doctor carrying out initial assessment

MASCC score is an important guide as patients with a high score can be considered low risk. If these patients are reviewed within 24 hrs of admission by haematology, they can be considered for early discharge or entry into a clinical trial. It is therefore important to inform the haematology team about any patient treated for neutropenic sepsis, even if clinically stable. Please note that a **high score equals low risk**, and vice versa.

Additional Information

Intravenous antibiotics MUST be given within one hour of arrival in the hospital or within one hour of the signs and symptoms developing if the patient is an in-patient.

If you suspect neutropenic sepsis do not wait for the patients FBC before commencing antibiotics. Failure to treat promptly can result in death.

Patients at risk of neutropenic sepsis include:

- Patients undergoing, or who have recently received cytotoxic chemotherapy. The greatest risk is usually 7-10 days after chemotherapy.
- Patients with haematological malignancies (leukaemia, lymphoma, myeloma, myelodysplastic syndromes).
- Other patients may also be at risk eg. Rheumatology patients on methotrexate.
- There may be a Lorenzo alert in place if the patient is at risk of neutropenia, or the patient may carry an alert card.

Signs and symptoms of neutropenic sepsis are:

- Fever of 38°C or above. Fever is usually the first (and may be the only) sign of neutropenic sepsis, but it can occur in the absence of fever, especially in patients on corticosteroids or following administration of paracetamol.
- Other symptoms may include: flu like symptoms, drowsiness/confusion, hypotension, tachycardia, vomiting, obvious source of infection (eg. mouth, chest, urine, central line, GI tract).

Investigations required for a patient with suspected neutropenic sepsis:

- FBC, U&E, liver & bone profile, CRP.
- Blood cultures to be taken peripherally AND from any central/peripheral lines in situ (ideally before antibiotics taken but do not delay giving antibiotics to take cultures)
- Most patients will require a chest x-ray and urine specimen as part of investigations **to locate the source of infection.**

Useful Contacts			
Acute Oncology SpR Bleep 1488	Acute Oncology CNS Bleep 1480	Haematology SpR Bleep 1015	On-call consultant haematologist – via switchboard,
<p><u>Pembroke Ward: ext. 5070.</u> Patients with confirmed neutropenic sepsis should be transferred to Pembroke Ward so please contact the nursing team there to alert them to new admissions. A side room is desirable but <u>not</u> essential, and it may be better to transfer to a bay on Pembroke Ward (so long as other patient(s) in the bay are NOT infectious) than outlie patient inappropriately on another ward. The staff may also be able to offer help and guidance to other wards with regard to care of these patients if this is not possible.</p>			