Neutropenic sepsis

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Always give 1st dose within 1 hour – send appropriate samples to laboratory where possible BEFORE starting antibiotics.

This is an emergency treatment, do not wait for FBC results before starting treatment.

Neutropenic sepsis:

Patients who have received recent anticancer treatment whose neutrophil count is ≤0.5 x 10^9/L who have either:

- A temperature of > 38°C or ≤36°C OR
- Other signs/symptoms consistent with clinically significant sepsis

Admit patient for urgent treatment and assessment and seek specialist advice. Triage and vitals within 30 minutes.

Emergency first-line treatment

First line	Meropenem 1g IV TDS *If serious line infection (e.g. chills or rigors with infusion through catheter and cellulitis around the catheter entry/exit site) is suspected or if there is a history of MRSA then:* **ADD** Vancomycin IV (Target range 15-20mg/L) Vancomycin Adult Guideline
Severe penicillin allergy and **CrCl >20mL/min**	Ciprofloxacin IV 400mg BD **PLUS** Gentamicin Once Daily Gentamicin **PLUS** Vancomycin IV (Target 15-20mg/L) Vancomycin Adult Guideline *If there is evidence of necrotizing mucositis, sinusitis, peridontal cellulitis, perirectal cellulitis, intra-abdominal infection (including neutropenic enterocolitis), pelvic infection or anaerobic bacteraemia:* **ADD** Metronidazole IV 500mg TDS
Severe penicillin allergy and **CrCl <20mL/min**	Ciprofloxacin IV Antimicrobial dosing in renal impairment **PLUS** Vancomycin IV (Target 15-20mg/L) Vancomycin Adult Guideline *If there is evidence of nectorizing mucositis, sinusitis, peridontal cellulitis, perirectal cellulitis, intra-abdominal infection (including neutropenic enterocolitis), pelvic infection or anaerobic bacteraemia:* **ADD** Metronidazole IV Antimicrobial dosing in renal impairment

All patients diagnosed with severe sepsis should be discussed with microbiology during working hours

If the diagnosis is NOT neutropenic sepsis then please see Sepsis ? source

Confirmed Neutropenic sepsis

Neutropenic and clinically unwell	Neutropenic and clinically stable
Continue treatment as above and ensure review by oncology/haematology. Consider appropriate levels of escalation.	Assess risk of sepsis complications using the MASCC scoring tool below. **For oncology patients receiving treatment for solid tumours ONLY. NOT for use in haematology patients.**

MASCC scoring tool

Characteristic		Score
Age	≥ 60 years	0
	< 60 years	2
Patient dehydrated, requiring fluids?	Yes	0
	No	3
Patient systolic blood pressure	Systolic BP <90mmHg	0
	Systolic BP ≥90mmHg	5
Does the patient have COPD?	Yes	0
	No	4
Does the patient have a solid tumour or no previous fungal infection in a haematological malignancy?	Solid tumour or no previous fungal infection in a haematological malignancy	4
	Haematological malignancy with previous fungal infection	0
Does the patient have symptoms related to this infective neutropenic episode?	None or mild symptoms	5
	Moderate symptoms	3
	Severe symptoms	0
Was the patient already an inpatient before this episode of infective neutropenia?	Admitted with this episode	3
	Already an inpatient	0

Patients with a score of < 21 = HIGH RISK of complications (consider IV antibiotic therapy)

Patients with a score of ≥ 21 = LOW RISK of complication (consider oral antibiotic therapy)

Notes:

1 Scoring attributed to 'symptoms related to this infective neutropenic episode' is not cumulative; therefore the maximum theoretical score is 26.

High-risk MASCC score < 21

Where high risk MASCC score is indicated (<21) continue inpatient care and re-asses as appropriate. Consider escalation if required.

Low-risk MASCC score >21

Low risk MASCC (>21): Consider outpatient antibiotic therapy. Take into account the patient's social and clinical circumstances and the need to return to hospital promptly if they become unwell.

Empirical oral options

There are no equivalent oral step-down antibiotics. Therefore patients prescribed the antibiotics suggested below should be closely monitored.

Patients should be switched to oral antibiotics based on the clinical situation, a low NEWS score (typically <3), and an increasing neutrophil count >0.5

Oral antibiotics when no culture results available and no history of MRSA:

Co-amoxiclav PO 625mg TDS

PLUS

Ciprofloxacin PO 750mg BD

Allergy to penicillin:

Levofloxacin PO 500mg BD

Unresolved pyrexia

Do not switch empirical antibiotics in patients with unresponsive fever unless there is clinical deterioration or a microbiological indication (NICE 2012)

Consider taking further cultures if pyrexia continues or condition deteriorates

If fever persists ≥ 48 hours despite IV antibiotics discuss with microbiology. If patient is not clinically improving or deteriorates they should be reviewed by a senior member of the medical team.

Duration

Consider discontinuing IV antibiotics when neutrophils are improving and reach 0.5 and patient remains afebrile for 48-72 hours

OR

after 10 days treatment and afebrile.

For *Staphyloccus aureus* bacteraemia (including MRSA), a minimum of 14 days appropriate antibiotic treatment intravenously is recommended regardless of neutrophil recovery.

If intravenous antibiotics are anticipated for a duration of more than 7 – 10 days, consider early referral for insertion of an appropriate vascular access device e.g. midline catheter or PICC. (Morriston patients are referred to the Vascular Access Team). In order to prevent damage to vessels and preserve vessel health, factors such as pH, volume of dilution, speed of infusion, size and fragility of peripheral veins should also be considered.

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Authorisation Form for Publication onto COIN

PLEASE ENSURE THAT ALL QUESTIONS ARE ANSWERED – IF NOT APPLICABLE PLEASE PUT N/A

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