



- Defined as temperature > 38°C and neutrophils < 1.0 x 10<sup>9</sup>.
- Myelodysplasia patients may have functional neutropenia despite neutrophils > 1.0 x 10<sup>9</sup>.
- Provide supportive measures such as IV fluids.
- The clinical status may change following initial assessment and should be assessed at least daily.



### Assess Patient

- History:** previous infections (esp. MRSA, fungal), antimicrobial prophylaxis, drug allergies, renal impairment
- Examination:** pulse, BP, RR, O<sub>2</sub> sats, chest, central venous catheter (CVC), skin and mucous membranes, peri-anal

### Initial Investigations

- Bloods:** Full blood picture, coagulation profile, urea and electrolytes, liver function, glucose level, CRP
- Microbiology:** **Blood cultures x 2** (CVC and peripheral), MSU, sputum culture if productive, dry throat swab for viral PCR if respiratory symptoms, faeces culture if diarrhoea
- Radiology:** Chest X-ray

### Start Antibiotics After Cultures Collected

- do not delay for investigation results
- dose adjust if renal impairment (see Therapeutic Guidelines-Antibiotic)

**piperacillin/tazobactam 4.5g 8 hrly**

If Systemic Compromise\* or previous pseudomonal culture

- add **gentamicin 5mg/kg daily<sup>^</sup> IV daily**

If Pneumonia present

- add **azithromycin 500mg IV daily**
- consider *P. jiroveci* and influenza (during influenza season)

If Gram Positive organism in blood culture, patient in shock, known MRSA carrier, cellulitis, obviously infected vascular device

- add **vancomycin 1.5g IV 12 hrly** (check trough level) until susceptibilities known

**For guidance in management of unstable patients, patients with positive cultures or for investigations discuss with the ID service.**

\* shock (SBP<90mmHg, vasopressor support), confused, DIC, new/worsening major organ dysfunction, O<sub>2</sub> sats < 90mmHg

If Delayed Penicillin Hypersensitivity use **cefepime 2g IV 8 hrly**

If Immediate Penicillin Hypersensitivity (urticaria, angioedema, bronchospasm or anaphylaxis within 1 hr), use **ciprofloxacin 400mg IV 12 hrly + vancomycin 1.5g IV 12hrly.**

**If Clinical Deterioration Despite 72 Hr Of Antibiotics And No Organism Cultured**

**Add vancomycin 1.5g IV 12 hourly**

Re-evaluate patient:

- Perform blood culture
- Repeat chest X-ray
- Review investigations
- Re-examine patient including CVC

**If Clinically Stable After 72 Hr Of Antibiotics And No Piperacillin/Tazobactam Resistant Organism Cultured**

**Continue piperacillin/tazobactam**

**<sup>^</sup>Contraindications to gentamicin & amphotericin B desoxycholate**

- Baseline abnormal creatinine (CrCl < 50 mL/min)
- Single kidney
- Two or more nephrotoxins
- Unable to tolerate fluid loads or maintain electrolyte levels despite IV replacement

**If Remains Febrile After 96 Hr Of Antibiotics And High Risk<sup>#</sup>**

**Perform CT chest and sinuses  
Add amphotericin B desoxycholate 1mg/kg/24 hr infusion**

- If contraindication to **amphotericin B desoxycholate<sup>^</sup>** use **liposomal amphotericin 1mg/kg/day**
- If imaging suggests fungal infection but sputum culture negative: request bronchoscopy; May need to consider lung biopsy
- If proven invasive aspergillosis use **voriconazole IV 6mg/kg 12 hrly for 24 hrs then 4mg/kg 12 hrly**

**#High Risk patients**

- Haematological malignancy
- Duration of neutropenia expected > 10 days
- Age > 60 years
- Incomplete cancer remission
- Significant co-morbidities
- Significant mucositis
- High dose systemic steroids

### Additional Information

- Adjust antibiotics on basis of microbiology results. Continue antibiotics until neutrophil recovery, settled fever and resolution of infection at all sites.
- For blood cultures with *Candida* spp, CVC must be removed.