Oncology Neutropenic Sepsis Guidance

NHS Tayside

Neutropenic sepsis = sepsis plus neutrophil count <0.5 or <1 if chemotherapy within past 21days

- **Assess patient with possible neutropenic sepsis within 15 minutes of presentation to hospital and commence resuscitation following "Sepsis 6" care bundle**
- **Assume they are neutropenic if they have received chemotherapy within the past 3 weeks**
- Assess severity of sepsis and assign to risk category as detailed below
- Penicillin/beta-lactam Allergy – confirm type and severity of previous reaction e.g. rash, anaphylaxis
- If patient has had chemotherapy within the past 3 weeks and has temperature ≥38°C or <36°C or clinical evidence of significant sepsis (SIRS≥2) **initiate antibiotic therapy within 1 hour – do not wait for the blood results to come back. Always take blood cultures before giving antibiotics but do not wait for full infection screen to be performed**
- When blood results are available switch to Hospital Antibiotic Adult protocol if above definition of neutropenic sepsis not fulfilled
- All patients should have a full infection screen - **Blood cultures (Hickman line and peripheral venous) Stool culture MSU Sputum culture Chest X-ray Swab skin lesions and Hickman line exit site Throat swab – bacterial and viral**
- Review previous microbiology results for resistance

STANDARD RISK PATIENTS
Neutropenia + Sepsis + NEWS ≤ 6

START ANTIBIOTIC THERAPY WITHIN 1 HOUR
Piperacillin/Tazobactam
No routine gentamicin

Penicillin Allergy: Teicoplanin + Aztreonam

If anaphylaxis or angioedema:
Teicoplanin + Ciprofloxacin[Δ]

[Δ]If receiving ciprofloxacin prophylaxis – discuss with Micro

HIGH RISK PATIENTS
Neutropenia + Septic Shock or NEWS ≥ 7

START ANTIBIOTIC THERAPY WITHIN 1 HOUR
Piperacillin/Tazobactam + Gentamicin* (see below)

Penicillin Allergy:
Teicoplanin + Aztreonam + Gentamicin* (see below)

If anaphylaxis or angioedema:
Teicoplanin + Ciprofloxacin + Gentamicin* (see below)

Add Antimicrobial cover for specific additional infection risks:
- **Previous or current MRSA infection/colonisation, suspected line infection – Teicoplanin**
  - **Teicoplanin resistant organism isolated previously - Vancomycin**
- **Community acquired pneumonia suspected (consider bronchoscopy) – Clarithromycin/Doxycycline**
- **Previous ESBL infection of known ESBL carrier, in place of piperacillin/tazobactam - Meropenem**

MONITOR ALL PATIENTS HOURLY

Reassess antibiotic therapy after 48 - 72 hours

- Afebrile within first 2-3 days of treatment
  - Aetiology identified → If general condition improving and symptoms resolving convert to oral antibiotic as guided by sensitivities
  - No aetiology identified → If general condition improving and symptoms resolving convert to oral ciprofloxacin 500mg bd
- Persisting fever during first 3 days of treatment
  - Seek specialist advice
  - Repeat cultures → Add teicoplanin if not already started and consider change to Meropenem. **If patient already on Meropenem get Micro/ID advice.**

If persistent fever after 96 hours and no focus of infection

Refer to Haematology Antifungal Guidance

Antibiotic Dosing
(assuming normal renal and hepatic function)
Piperacillin/tazobactam IV 4.5g qds
Aztreonam IV 2g qds
Ciprofloxacin IV 400mg bd
Clarithromycin IV 500mg bd
Doxycycline PO 100mg bd
Meropenem IV 1g tds
Teicoplanin – 400mg bd for 3 doses then 400mg od (if >80kg 6mg/kg)
Vancomycin – follow local dosing guidance

AMG/Oncology: July 2012
Updated: Jan 2017
Review: Jan 2019
Ref: SAPG guidance 2016
Local expert opinion

Gentamicin*

Standard dose – 7mg/kg follow guidance

Cisplatin patients – discuss with SpR/Cons

eGFR <30ml/min – discuss with SpR/Cons