BC CANCER AGENCY EMPIRIC TREATMENT OF FEBRILE NEUTROPENIA

ADULT FEBRILE NEUTROPENIC PATIENT

ANC < 0.5 x 10⁹ /L
ORAL TEMPERATURE ≥ 38.3 °C

LOW RISK

May treat as outpatient

Features:

- Absolute neutrophil count ≥ 0.1 x 10⁹ /L
- Absolute monocyte count ≥ 0.1 x 10⁹ /L
- Normal findings on a chest radiograph
- Nearly normal liver and renal function tests
- Duration of neutropenia < 7 days
- Resolution of neutropenia expected in < 10 days
- No intravenous catheter site infection
- Early evidence of bone marrow recovery
- Malignancy in remission
- Peak temperature of < 39.0 °C
- No neurological or mental changes
- No abdominal pain, or appearance of illness
- No comorbid complications, e.g., shock, hypoxia, pneumonia, serious infection, etc.

HIGH RISK Admit

Features:

- Inpatient status at time of fever
- Significant medical comorbidity or clinically unstable, e.g., COPD, hypotension, hypoxia, dehydration, etc.
- Anticipated prolonged severe neutropenia: ANC ≤ 0.1 x 10⁹ /L for ≥ 7 days
- Serum creatinine > 176 µmol/L
- Liver function tests > 3 x upper normal limit
- Uncontrolled, progressive cancer
- Pneumonia or other complex infections
- Poor performance status (ECOG > 1)
- Intravenous catheter site infection

INTERMEDIATE RISK

Consider admission

Not high or low risk

CONSIDER SENDING HOME, IF FULLFILS CRITERIA BELOW

RELIABLE PATIENT, who **can return** to facility easily and **can take oral medications.**

Arrangements can be made to contact and/or formally **re-assess patient daily** to assess condition.

If patient unstable - there must be ability to admit patient urgently.

RECOMMENDED ANTIBIOTICS:

ADMIT

(Please check local hospital FORMULARY) (Hotlink to recommended doses)

- Intravenous IMIPENEM OR MEROPENEM
- Intravenous CEFEPIME OR CEFTAZIDIME (NOT recommended as monotherapy in areas at risk for ESBL-producing bacteria)
- Intravenous AMINOGLYCOSIDE (e.g., Tobramycin / Gentamicin), AND
 - ANTIPSÉUDOMONAL PENICILLIN (e.g., Ticarcillin+Clavulanate), OR
 - IMIPENEM / MEROPENÉM, OR
 - CEFTAZIDIME / CEFEPIME
- ADD Intravenous VANCOMYCIN, if catheterrelated infections, positive blood cultures for resistant gram positive bacteria (e.g., MRSA), known colonizer for resistant S. pneumoniae or MRSA, signs of CV impairment (e.g., hypotension), soft tissue infection, T > 40 °C, etc.
- If true beta-lactam allergy, treat with VANCOMYCIN + AMINOGLYCOSIDE + CIPROFLOXACIN.

NEPHROTOXIC AGENTS IN PATIENTS, RECEIVING CISPLATIN OR OTHER NEPHROTOXIC CHEMOTHERAPY.

IF POSSIBLE, AVOID AMINOGLYCOSIDES OR OTHER

RECOMMENDED ANTIBIOTICS:

(Hotlink to recommended doses)

- ORAL CIPROFLOXACIN + ORAL AMOXICILLIN/CLAVULANATE
- If true beta-lactam allergy, consider ORAL CIPROFLOXACIN + ORAL CLINDAMYCIN

(Not recommended for children – see guidelines) OTHERS - ADMIT

(See other antibiotic options under HIGH RISK section)

FORMALLY RE-EVALUATE PATIENT IN 2 to 3 DAYS.

IF AFEBRILE for \geq 48 HOURS, AND NEUTROPHILS \geq 0.5 X 10 9 / L for 2 consecutive days, no positive source of infection identified and patient clinically stable, may discontinue antibiotics and observe patient. IF FEBRILE, admit patient for further investigations.

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for patients will be solely responsible for verifying the doses, providing the prescriptions and standards of care.

THESE GUIDELINES ARE A COMPILATION OF PUBLISHED GUIDELINES AND CURRENT PRACTICE. (Hotlink to references)

Any comments/questions – contact Dr. Kerry Savage at: KSavage@bccancer.bc.ca or Dr. Shirin Abadi at Sabadi@bccancer.bc.ca or

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SUGGESTED DOSING FOR ANTIBIOTICS (IN ADULT PATIENTS WITH **NORMAL** RENAL FUNCTION):

Amoxicillin+Clavulanate PO 500 mg TID

Cefepime IV 1-2 g Q8-12H

Ceftazidime IV 1-2 g Q8H

Ciprofloxacin IV 400 mg Q12H

PO 750 mg Q12H

Gentamicin/Tobramycin IV 5-7 mg/kg IV Q24h (if CrCl > 60 mL/minute,

otherwise use caution & prolong dosing interval)

Imipenem IV 500 mg Q6H

Meropenem IV 1 g Q8H

Piperacillin+Tazobactam IV 3.375 g IV q6h

Ticarcillin+Clavulanate IV 3.1 g IV q4-6h

Vancomycin IV Dose varies depending on patient's weight, age, and

serum creatinine (goal: to achieve steady-state trough level of 10-15 mg/mL, depending on type of

infection and patient-specific factors)

References¹⁻⁷:

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- 4. Rubenstein EB, Rolston K, Benjamin RS, et al. Outpatient treatment of febrile episodes in low-risk neutropenic patients with cancer. Cancer 1993;71(11):3640-6.
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- 7. Sanford JP. Guide to antimicrobial therapy. Dallas, Texas: Antimicrobial Therapy, Inc.; 2008.