Neutropenic Fever\(^1\) Outpatient Treatment For Solid Tumor Patients (18 years and older)

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care. Local microbiology and susceptibility/resistance patterns should be taken into consideration when selecting antibiotics. This algorithm should not be used to treat pregnant women.

- Complete history and physical exam
- Start IV hydration
- CBC with differential, BMP, lactic acid
- Blood cultures (with a set collected from each lumen simultaneously if CVC present and 1 from peripheral site); other cultures (i.e., sputum culture, urinalysis with culture and sensitivity; respiratory viral PCR panel) only if clinically indicated
- MRSA nasal swab (if pneumonia suspected or confirmed)
- Chest x-ray or other tests as clinically indicated
- Calculate MASCC Risk Index score (see Appendix A)
- First dose of each antimicrobial should be given STAT in the Acute Cancer Care Center for all febrile neutropenic patients
- Patient should be observed ≥ 4 hours after initial dose of antimicrobial prior to discharge
- Consider the following when selecting antibiotics: recent culture and sensitivity results, history of recent gram negative organisms or colonization, and antimicrobial allergies

**First line therapy**:  
- Ciprofloxacin 750 mg PO twice daily \(\text{plus}\)  
- Amoxicillin/clavulanic acid 875 mg PO twice daily each for 7 days

**First line therapy**\(^2\) if serious documented serious beta-lactam allergy (anaphylaxis, hives, or serious non-IgE mediated drug reaction\(^3\)):  
- Ciprofloxacin 750 mg PO twice daily \(\text{plus}\)  
- Clindamycin 600 mg PO three times daily each for 7 days

**Second line therapy**:  
- Levofloxacin 750 mg PO daily for 7 days

Assess if patient is considered low risk: \(\text{i.e., MASCC Risk Index score} \geq 21\) and no other complicating factors present) and meets all of the following criteria for outpatient treatment:
- Solid tumor
- Able to tolerate oral medications
- Able to tolerate fluids
- Does not use feeding tube as primary route for nutrition and medications
- No confirmed focus of infection
- Resides within 1 hour travel time of MD Anderson
- Has a 24-hour caregiver
- Has access to transportation and telephone at residence
- Age ≥ 18 years old
- No quinolone allergy for oral regimens
- No fluoroquinolone-resistant or multi-drug resistant organism colonization
- No history of non-compliance
- Not currently on antibiotics

Schedule patient for outpatient follow up\(^4\)

Tolerates therapy and no longer afebrile?

- Yes

Able to adhere to outpatient follow up?\(^5\)

- Yes

Refer to Neutropenic Fever Inpatient Adult Treatment (Solid Tumors) algorithm

- No

Does patient meet criteria?

- Yes

Refer to Neutropenic Fever Inpatient Adult Treatment (Solid Tumors) algorithm

- No

Patient presents with suspected or proven neutropenia and fever

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1. Criteria:
   - Absolute neutrophil count (ANC) \(\geq 0.5\) K/microliter and a temperature either \(\geq 38.3\)°C or \(\geq 38\)°C for 1 hour or longer or
   - ANC \(\leq 1\) K/microliter and an expected decline to \(\leq 0.5\) K/microliter over 48 hours and a temperature either \(\geq 38.3\)°C or \(\geq 38\)°C for 1 hour or longer

2. Doses indicated are for patients with normal renal/hepatic function. Refer to institutional renal dosing guide (internal only) or tertiary dosing references (e.g., Lexicomp) for renal dosing recommendations.

3. Examples of non-IgE mediated drug reactions include Stevens-Johnson syndrome, toxic epidermal necrolysis, and drug reaction with eosinophilia and systemic symptoms (DRESS)

4. See Appendix B: Outpatient Follow up

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BMP = basic metabolic panel
MASCC = Multinational Association of Supportive Care in Cancer

Department of Clinical Effectiveness V8
Approved by The Executive Committee of the Medical Staff on 03/09/2022

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APPENDIX A: Multinational Association for Supportive Care in Cancer (MASCC) Risk Index Score

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burden of illness: no or mild symptoms</td>
<td>5</td>
</tr>
<tr>
<td>No hypotension</td>
<td>5</td>
</tr>
<tr>
<td>No chronic obstructive pulmonary disease</td>
<td>4</td>
</tr>
<tr>
<td>Solid tumor</td>
<td>4</td>
</tr>
<tr>
<td>No dehydration</td>
<td>3</td>
</tr>
<tr>
<td>Burden of illness: moderate symptoms</td>
<td>3</td>
</tr>
<tr>
<td>Outpatient status</td>
<td>3</td>
</tr>
<tr>
<td>Age &lt; 60 years</td>
<td>2</td>
</tr>
</tbody>
</table>

- “Burden of illness” not cumulative
- Patients with score ≥ 21 are considered low risk

APPENDIX B: Outpatient Follow Up

- Schedule outpatient visit for Days 2, 3 and 7; and phone follow-up for Days 4, 5 and 6
- Day 2: CBC with differential; repeat creatinine if baseline greater than 1.2 mg/dL
- Day 3: CBC with differential, repeat creatinine
- Day 7: CBC with differential, repeat creatinine or phone follow-up if neutropenic fever has resolved
SUGGESTED READINGS


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This practice consensus statement is based on majority opinion of the Neutropenic Fever experts at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

- Antimicrobial Stewardship Team†
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  - Wendy Garcia, BS*
  - Alexandra Hacker, MSN, APRN, FNP-BC*
  - Tami N. Johnson, PharmD (Pharmacy Clinical Programs)
  - Loretta Nastoupil, MD (Lymphoma/Myeloma)
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