



St. Joseph Health

St. Jude Medical Center

Affected Departments:

- Nursing All

Policy/Procedure

Neutropenic Patient Care

Nursing

10889

Official (Rev: 1)

I. PURPOSE:

To provide guidelines on the nursing management of patients with neutropenia and those who are at risk for neutropenia secondary to disease process, chemotherapy administration or radiation therapy.

II. POINTS TO EMPHASIZE:

DEFINITIONS:

- Neutropenia: A decrease in the number of circulating neutrophils in the blood evidenced by an absolute neutrophil count (ANC) less than 1000/mm³.
- Fever: Defined as a temperature greater than or equal to 38 degrees Celsius (100.4° F). Fever is the most reliable, and often the only sign of infection in patients with neutropenia. Neutropenic patients may not express classic signs of infection (e.g. redness, edema and pus) and in some cases may not be able to manifest fever because they have a suppressed immune system.
- Calculation of ANC:

$$\text{ANC} = \frac{(\% \text{ neutrophils} + \% \text{ bands}) \times \text{WBC}}{100}$$

Example:

$$\begin{aligned} \text{WBC} &= 1600 \text{ (must use total number)} \\ \text{Neutrophils} &= 48\% \\ \text{Bands} &= 5\% \\ \frac{(48\% + 5\%) \times 1600}{100} &= \text{ANC of } 848 \end{aligned}$$

GUIDELINES:

** Neutropenic patient guidelines will be instituted for patients with an ANC below 1000/mm³.

- Patient must be in private room.
- Neutropenic patients and other immunosuppressed patients, will wear a mask when outside of their assigned room for any reason (i.e. walking in the hallway, going for a procedure)
- Standard precautions are in effect.
 - Protective or strict isolation studies reveal no significant differences in documented infection, febrile episodes, or antibiotic use for patients with chemotherapy induced neutropenia.
 - Perform hand hygiene before and after each patient contact. Soap and water or alcohol rub may be used following Hand Hygiene Policy. (*If patient is receiving Chemotherapy, soap and water must be used*).
 - Alcohol based hand rub may be used if hands are not visibly soiled and patient does not have C-Diff.
 - When using soap and water perform wash hands promptly and thoroughly with antimicrobial soap for a minimum of 15 seconds.
- Aseptic technique shall be used when performing all invasive procedures, or when providing daily care to any invasive tubing (including bladder, biliary, intestinal, tracheal, abdominal, pleural, mediastinal, venous, or arterial catheter).
- No pet visitation is allowed for neutropenic patients.

- F. No fresh or dried flowers, live plants or moss are allowed in the room of a neutropenic patient.
- G. Neutropenic patients should not be placed in a negative pressure room.
- H. Healthcare personnel or visitors who have a communicable disease (including colds and other respiratory symptoms) should refrain from caring for these patients, or entering the room.
- I. Restrict visitation of children to immediate family members (i.e. child or grandchild). Refer to hospital policies for further visitation guidelines.
- J. Exposure to all sources of stagnant water (including denture cups, soap dishes, flower vases, respiratory equipment, irrigating containers and humidifiers) should be avoided. When possible the compromised patient/neutropenic patient should avoid tap water and ice made from tap water.
- K. Avoid trauma to skin and mucus membranes.
 - 1. Avoid use of catheters, enemas, NG tubes and rectal thermometers, suppositories, or rectal examinations.
 - 2. Avoid IM injections.
 - 3. Prevent pressure sores and constipation.
 - 4. Suggest shaving with an electric razor.
 - 5. Consider the risk benefit ratio for invasive procedure.
 - 6. Recommend soft tooth brush to brush teeth.
- L. Encourage coughing and deep breathing exercises.
- M. Dietary precautions: See official St. Jude Medical Center Diet Precautions for Immunosuppressed Patients. MD must write the order for neutropenic diet per protocol and the order must be entered into Meditech. Educate patient/family regarding diet precautions and stress the importance of good food practices:
 - 1. Carefully wash hands and food preparation surfaces (knives, cutting boards, etc) before and after preparing food, especially after handling raw meat, poultry or fish.
 - 2. Eliminate raw and unwashed meats, eggs, fish and shellfish from the diet. Cook these foods thoroughly before consuming.
 - 3. Wash fresh fruits and vegetables well with cool tap water. Scrub surfaces prior to cutting through the skin of fruits. Washed fruits and vegetables should not be blemished, bruised or pierced.
 - 4. Use only pasteurized, processed or heat treated ciders, teas, juices, milk, yogurt, cheeses and honey.
- N. Assessment:
 - 1. Laboratory data will be used to assess the presence of neutropenia by calculating ANC. It is important to note that neutropenia can occur when the total WBC is within the normal range or elevated.
 - a. CBC-WBC with differential (daily) per physician's order.
 - b. Culture reports (daily) per physician's order.
 - 2. Monitor vital signs every 4 hours and PRN, or as directed by physician.
 - 3. Signs and symptoms:
 - a. Fever
 - b. Common sites of infection to inspect:
 - i. Respiratory tract: fever, cough, dyspnea on exertion and adventitious breath sounds
 - ii. Skin and mucous membranes: erythema, tenderness, hot skin and edema, especially in oral cavity, axilla, buttocks, mouth or perineal/rectal area
 - iii. Urinary tract: fever, dysuria, frequency, hematuria and cloudy urine
 - iv. GI tract: abdominal pain, alimentary mucositis or diarrhea
 - v. CNS symptoms: mental status changes, headache, seizures
 - vi. Indwelling devices (i.e. Vascular Access Device, catheters, ventricular peritoneal shunts, Omayo reservoirs): fever, erythema, pain or tenderness, edema, drainage and induration at site.
 - c. Septic shock: fever, chills, change in level of consciousness, altered WBC levels, tachypnea, edema and bounding peripheral pulses, respiratory distress, thready pulse,

oliguria and metabolic acidosis.

- O. Prevention of neutropenia and associated infection:
1. Treatment with colony stimulating factors as per physician order (i.e. G-CSF, GM-CSF, Peg-filgrastim).
 2. Avoid trauma to skin and mucous membranes. Provide oral care four times daily with soft toothbrush.
 3. Teach patient and family neutropenic protective measures, and signs and symptoms to report to physician.
 4. Avoid live vaccinations or contact with those who have recently received them.
- P. Management of fever:
1. Review Medication Administration Record for fever-causing medications (i.e. Ambisone, Amphotericin, Gleomycin) or fever suppressing medications (i.e. steroids, anti-pyretic containing medications) and note last time of administration.
 2. Note recent blood product administration and eliminate possibility of transfusion reaction.
 3. Notify physician of:
 - a. First temperature spike (greater than or equal to 38°C or 100.4°F) or continued fevers after start of antibiotics.
 - b. Changes in pulse, respiration or blood pressure associated with fever.
 - c. Change in level of consciousness.
 4. Obtain cultures per physician order (blood, urine, sputum, etc) and administer antipyretics per orders.
 - a. In patients who are neutropenic, utilize caution in administering antipyretics or antipyretic containing medications before initial temperature spike as they may mask fever and delay treatment.
 - b. It is generally acceptable to utilize Tylenol as a premedication (i.e. blood, monoclonal antibodies, etc) as ordered before first temperature spike.
 5. Administer antibiotics per physician's orders. Antibiotics must be started after blood cultures have been collected and within 2 hours of temperature spike.

III. DOCUMENTATION:

Document the following in the medical record:

- A. Activate the neutropenia standard of care in Meditech.
- B. Signs and symptoms of infection if present.
- C. Physician notified of signs and symptoms of infection or other notifications.
- D. Patient and family education.

IV. REFERENCES:

- A. St. Jude Medical Center. (2009) *Food Safety Guidelines: A guide to help you prepare food and eat safely*.
- B. Polovich, M., White, J.M. & Kelleher, L.O. (2009). *Chemotherapy and biotherapy: Guidelines and recommendations for practice* (3rd ed). Pittsburg, PA: Oncology Nursing Society

Referenced Documents

Reference Type	Title	Notes
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