42 year old woman with profound neutropenia and fever

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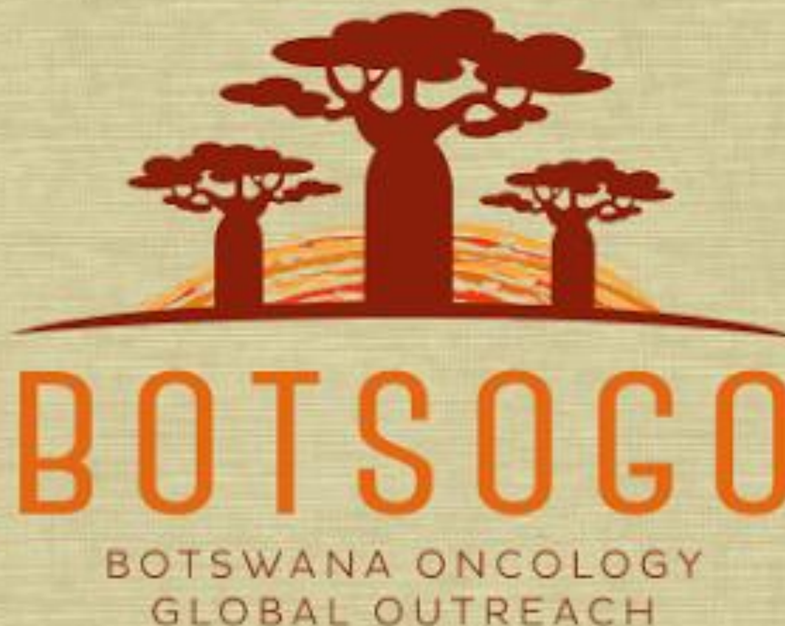

History of present illness

- 42 yo HIV+ female on ART with Stage IIIB diffuse large B cell lymphoma s/p 5 cycles of RCHOP (last given 9 days before) who presented to Accident and Emergency room in early October 2015
- Had fever, generalized weakness, vomiting, diarrhea for 6 days
- Also complained of facial swelling and inability to eat well

History of present illness

Oncology History:

- Initially developed adenopathy 2013
- FNA of right cervical node in March 2013 with reactive hyperplasia, AFB negative
- Underwent surgical biopsy March 2015 – morphology consistent with DLBCL, and IHC + for LCA, CD20, PAX5, and BCL2; IHC – for CD3, MUM1, MNF116, CD138 (result reported in May 2015)

History of present illness

Oncology History, continued…

- CT C/A/P in June 2015 with bilateral solitary hilar prominent lymph nodes and well outlined, solid, poorly enhancing mass measuring 4.3 x 3.61 cm in right iliac fossa
- On initial exam had right axillary node 5 x 5 cm, right inguinal adenopathy
- Started RCHOP in June 2015, admitted with neutropenic fever after cycle #1, dose reduced for cycle 2
- Had neutropenia again after cycle 3, dose reduced for cycle 4

History of present illness

Cycle #1 (mid-June 2015), BSA 1.9

- – Rituximab 725 mg
- – Cytoxan 1200 mg
- – Doxorubicin 90 mg
- – Vincristine 1.8 mg
- – Prednisone 100 mg po OD x 5 days

History of present illness

Cycle #2 (21 days later in July, dose reduced by 10% due to neutropenic fever after 1st cycle, “Good response no more tumor”)

- Rituximab 700 mg
- Cytoxan 1100 mg
- Doxorubicin 80 mg
- Vincristine 2.0 mg
- Prednisone 100 mg po OD x 5 days

History of present illness

Cycle #3 (22 days later, “Patient did not have severe neutropenia so kept same dose”)

- Rituximab 700 mg
- Cytoxan 1100 mg
- Doxorubicin 80 mg
- Vincristine 2.0 mg
- Prednisone 100 mg po OD x 5 days

History of present illness

Cycle #4 (26 day slater, Given neupogen for neutropenia after previous cycle)

- Rituximab 700 mg
- Cytoxan 1000 mg
- Doxorubicin 80 mg
- Vincristine 1.8 mg
- Prednisone 100 mg po OD x 5 days

History of present illness

Cycle #5 (31 days later in September, given prophylactic neupogen 300 mcg SC x 3 days after Cycle 4)

- WBC 3.43, ANC 1.9
- Rituximab 700 mg
- Cytoxan 1000 mg
- Doxorubicin 80 mg
- Vincristine 1.8 mg
- Prednisone 100 mg po OD x 5 days

Other Medical History

- Past Medical History
  - HIV+
    - CD4 630, viral load < 400 in May 2015
- Allergies
  - NKDA
- Medications
  - HAART (ABC, 3TC, Alluvia)
- Family History
  - No known family members with cancer

Exam

- General: alert, no distress
- Vitals: Temp 38.3 C, BP 107/67, Pulse 125
- HEENT: Swollen left eye, conjunctival pallor, questionable ecchymoses left tongue
- Cardiovascular: tachycardic, normal S1S2
- Pulmonary: clear to auscultation with good air entry bilaterally
- Abdomen: soft, nontender, nondistended, bowel sounds present
- MSK: generalized weakness
- Neuro: GCS 15/15

Investigations

WBC 0.22, ANC 0.0, Hgb 9.9, Plt 39

BMP with Na 133, K 3.0, Urea 3.1, Creatinine 49

LFT’s within normal limits

Hospital course

- Switched to piperacillin/tazobactam 4.5 mg IV TDS
- Given neupogen 300 mcg daily SC
- Afebrile within 24 hours of admission
- 3 days after hospitalization, neupogen increased to 600 mcg daily
- 4 days after admission, WBC up to 6.31, ANC 5.2, Hb 10.2, Plt 89

Nursing Interventions for Neutropenia

- Besides use of antibiotics nursing can include;
- Washing hands thoroughly and frequently with water and soap before and after direct patient contact
- Use of private room where applicable
- Avoid persons with viral or contagious illness to be contact with patient
- Clean and disinfect equipment before patient contact and after use

Interventions continued…..

- Give nursing care to neutropenic patient first to reduce risk of cross infection
- Provide well cooked diet only, no raw fruits or vegetables
- Don't allow live plants or cut flowers in standing water (avoid all stagnant water)
- Avoid overcrowded places
- Use universal precautions every time when caring for the patient

Nursing interventions….

- Assume that any change from the ordinary is infection until proven otherwise.
- Assess the skin and mucous membrane in each shift and document in patient record
- Assess vital signs at least 4hourly and document
- Notify physician if temp is elevated or greater than 38 degrees
- Facilitate workup of suspected infection by obtaining ordered culture and blood specimen
- Administer antibiotics and other treatment as ordered

Nursing interventions of thrombocytopenia

- Limit invasive procedures
- Provide safe environment
- Avoid tooth flossing and hard truth brushes
- Avoid use of rectal thermometers, suppositories, enemas and rectal exam.
- Assess for bleeding

Nursing interventions of thrombocytopenia

- Assess for frank evidence of bleeding (e.g. epitasis, hematemesis, melena, hematuria, vaginal bleeding
- Observe sites of invasive procedures such as vascular access devices
- Administer appropriate treatment, platelets transfusions and other blood components as ordered.

Education as part of Nsg interventions

- Education or pre-chemo counseling should not be limited to possible side effects but include S/S of infection.
- Because of risk of septic shock associated with neutropenia, the patient and family should also be taught to take any fever serious and notify health care professionals
- Family education should also include importance of assessing daily for evidence of bleeding and reporting promptly.

Challenges

- Overcrowding of patients
- No isolation or private room due to structural challenges
- Mixing of inpatient and outpatient in one building.
- Shortage of skilled manpower leading to inadequate teaching and assessment of patients.
- Shortage of drugs

Questions:

- What is the recommendation for patients struggling with neutropenia?
- If the patient has severe neutropenia after first cycle with how much % should the chemo be reduced.
- In case of shortage of granulocyte colony stimulating factor (filgastrin/nupogen) should pt at high risk neutropenia still get their chemo?
- How can we prevent neutropenia for high risk pt?
- Any special meals recommended?