PROTOCOL FOR: Amphotericin B: Administration of

SUPPORTIVE DATA:

Amphotericin B is a potent antifungal medication used to treat systemic fungal infection, such as, aspergillosis, histoplasmosis, blastomycosis, cryptococcus, disseminated candidiasis and others.

Amphotericin B administration is frequently associated with significant reactions (please refer to Side Effects). Typically, the reaction(s) occurs within the first hour of administration, but it is not uncommon for the patient to experience a delayed reaction several hours after the completion of the infusion. The patient must be carefully assessed for signs and symptoms of Amphotericin B reactions. Prompt medical/nursing interventions must be initiated to effectively manage any reaction and to promote patient comfort.

Pre-medicating a patient with narcotics, particularly Meperidine, to prevent febrile responses of chills and rigors is seldom effective. This is because Meperidine has a very short half-life and fever and chills most commonly occur 45-50 minutes into the Amphotericin B infusion. The patient will receive relief from chills and rigors if the Meperidine is given at the onset of shivering.

Nephrotoxicity is a significant toxicity associated with Amphotericin B therapy. The dose of Amphotericin B may be decreased or therapy discontinued depending on the severity of Amphotericin B induced nephrotoxicity. Therefore, careful assessment of renal function is crucial in the care of the patient receiving Amphotericin B.

A test done (usually 1 mg) of Amphotericin B in 25-100 cc D_5W IV over 30-60 minutes is often given prior to initial treatment to assess for anaphylaxis or adverse reactions. Generally, pre-medications are not administered prior to the test dose. After the test dose, Amphotericin B therapy is started with gradually increasing doses until the therapeutic dose is achieved. The length of Amphotericin B therapy may be several days to several weeks.

If the patient's condition (i.e., fluid status, respiratory status, cardiovascular status) can tolerate it, Amphotericin B may be infused quickly over 2-3 hours. Slowing the rate of infusion does not prevent potential reactions or minimize the severity of the reactions.

DESIRED PATIENT OUTCOMES:

1. **The patient will maintain maximum level of comfort as evidenced by the absence of or minimal: fever, chills, nausea and vomiting, headache, myalgias, arthralgias, pain secondary to thrombophlebitis**

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The patient will maintain normal renal function.
The patient will maintain normal serum potassium and magnesium levels.
The patient will remain normotensive.

CLINICAL ASSESSMENT AND CARE:

The usual dose of IV Amphotericin B is 0.5 mg/kg-1.0 mg/kg every day or 1.5 mg/kg every other day. It is usually mixed in 250-500 cc D_5W.

SIDE EFFECTS:

1. **Hypersensitivity reactions:**
   a. **fever (incidence 13-88%)**
   b. **chills (incidence 13-88%)**
   c. **rigors (shaking chills)**
   d. **urticaria**

2. **Nephrotoxicity (incidence 80-90%):**
   a. **BUN and creatinine**
   b. **azotemia**
   c. **weight gain**
   d. **fluid imbalances**

3. **Respiratory distress:**
   a. **tachypnea**
   b. **shortness of breath**
   c. **wheezing**
   d. **bronchospasms**

4. **Cardiovascular:**
   a. **hypotension**
   b. **tachycardia**

5. **Electrolyte balance:**
   a. **hypokalemia (incidence 25%)**
   b. **hypomagnesemia**

6. **GI manifestations:**
   a. **anorexia (incidence 50%)**
   b. **nausea and vomiting (incidence 4-20%)**
   c. **diarrhea**

7. **Headache (incidence 0-45%)**

8. **Myalgias/arthralgias**

9. **Thrombophlebitis**

10. **Seizures (rare)**

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ASSESSMENT PRE-AMPHOTERICIN B ADMINISTRATION:

1. Monitor baseline electrolytes, BUN and creatinine.
2. Use central vein catheter or a large peripheral vein for administration.
3. Premedicate with anti-pyretics, corticosteroids or antihistamines as prescribed by the physician to prevent or minimize potential side effects.
4. Obtain and record baseline vital signs.
5. Place the following at the bedside during the first and escalating doses:
   a. emergency medications (corticosteroids, antihistamines, epinephrine)
   b. oral airway
   c. oxygen
   d. suction apparatus

INFUSION AND POST-INFUSION:

1. Check the solution and administer Amphotericin B as per JDH Medication Administration procedure.
2. Carefully monitor the infusion site for signs and symptoms of thrombophlebitis every hour during the infusion; notify the physician if any occur.
3. Obtain and record vital signs every 15 minutes for the first hour of the infusion and every hour until the completion.
4. Assess the patient for fever, chills and rigors every hour during the infusion and PRN as clinically indicated.
5. Medicate the patient with narcotics, antipyretics and corticosteroids as prescribed by the physician at the first sign of fever, chills or rigors.
6. Provide comfort measures for fever, chills or rigors (extra blankets, distraction, reassurance that the reactions will subside after infusion.
7. Assess the patient for signs and symptoms of respiratory distress every hour and PRN during the infusion.
8. Monitor patient for signs and symptoms of renal dysfunction.
9. Monitor and record I+O every 2-4 hours.
10. Monitor serum electrolytes, BUN, creatinine and magnesium during the course of Amphotericin B therapy.

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DOCUMENTATION:

1. **Document assessment findings and nursing interventions on to Oncology 6 flowsheets, MAR and Infusion Record.**

2. **Document patient response to care in the patient progress notes using focus note format per Department of Nursing Standards.**

APPROVAL: **Nursing Standards Committee**
Oncology 6 Standards Committee

EFFECTIVE DATE: **10/96**

REVISION DATE: **3/99, 10/00, 3/02**