

# **CARE OF THE CHILD WITH CANCER**

**The objective of this inservice is to provide a simple overview of the basic nursing skills needed to provide safe care for our children with cancer. To achieve this objective this inservice will discuss:**

- How to take report to provide proper care for the child**
- Signs and symptoms to watch for to prevent potential problems**
- What needs to be reported to the physician**
- Important lab values, how to calculate the ANC**
- Available resources.**

# **THE IMPORTANCE OF A GOOD REPORT**

**The information you receive is critical in planning your care of the patient. A good report doesn't have to be complex but it should include all the following:**

**Oncology History:** What type of cancer does the child have, when was he/she diagnosed and what therapy has been done (surgery, chemotherapy, etc) and approx. where is the child in the course of his/her therapy.

**Current Admission:** Why was the child admitted and what is the medical plan of care?

Often there are multiple plans like treating an infection but also giving therapy or doing diagnostic procedures. Anticipate what might be needed to complete the plan of care...are consents needed, supplies needed, orders needed?

**Tests and Procedures:** Be aware of any recent tests that have been done and the results if possible.

**Lab Tests:** Know the results of any current lab test. Know what lab work / or any results that will be needed during your shift. Be sure to notify the charge nurse and doctors of any abnormal lab results.

**Venous Access:** Be aware of what type of venous access device your patient has. By policy, venous access devices should be checked hourly. Notify the charge nurse immediately if you have any problems with your patient's central line!

**System Review with Bedside Rounds:** The nurse reporting off should give a brief system review including vital signs (remember BP's are done every 4 hours with hem/onc children). The nurse should also let you know any PRN medications given that day in association with her system review i.e. Tylenol for fever or morphine for pain.

# MONITORING THE CHILD RECEIVING CHEMOTHERAPY

Children who receive chemotherapy will require monitoring for the specific side effects caused by the agents they have received. However, the following information may be used as a guideline with most oncology patients.

## MYELOSUPPRESSION

Abnormal blood counts may be due to the oncology disease process or due to chemotherapy (or both!). It is important for the nurse to be aware of the patient's baseline condition and therapy to be able to understand the cause of the abnormality and the treatment. When a patient has chemotherapy, bone marrow suppression may occur 7-10 days after administration of chemo. Complications due to myelosuppression, especially neutropenia, are a major cause of mortality in our children with cancer.

**NEUTROPENIA:** Low WBC count (see the information included in this inservice)

**ANEMIA:** Low red blood cell count with Hgb < 8.0.

- Monitor for fatigue or dyspnea, low O2 sats on room air.
- Administer O2 if needed.
- Emphasize fall/ safety precautions as patients can become dizzy or weak.
- Prepare to transfuse packed cells if ordered.

**THROMBOCYTOPENIA:** Low platelet count

- Check daily platelet count and other labs, clotting time, fibrinogen.
- Monitor frequently for bruising, bleeding blood in sputum, vomitus or stool.
- Monitor LOC, a change in behavior or consciousness can indicate an intracranial bleed.
- Emphasize fall/safety precautions.
- Prepare to transfuse platelets or other blood products.

## **GASTROINTESTINAL**

### **NAUSEA/VOMITING :**

- Administer antiemetics as ordered, monitor their effectiveness and update the physician if control is not achieved.
- Decrease noxious stimuli, provide cold cloths, have clean emesis basin available.
- Monitor intake and output carefully, monitor electrolytes.
- Provide increased IV hydration as necessary, or TPN.

### **DIARRHEA:** Diarrhea may be a side effect of chemo or it may be caused by infection.

- Collect specimens to r/o c. diff. , rotavirus or other infections
- Measure stool output.
- Monitor electrolytes and replace losses as needed.
- Assess skin condition and provide frequent pericare.

### **CONSTIPATION:** Chemotherapy or dietary changes may cause severe constipation.

- Monitor current stool pattern against normal stool pattern.
- Monitor for ileus/obstruction: pain ,abdominal distention decreased bowel sounds.
- Obtain order for oral medication as needed. **DO NOT GIVE ANYTHING RECTALLY!**

## INTEGUMENTARY SYSTEM

**STOMATITIS:** Chemotherapy may cause stomatitis but the child on chemotherapy is also at risk for yeast or herpetic infections.

- Assess and document any oral lesions, redness, swelling white patches blisters or any pain.
- Emphasize preventative/ protective measures i.e. brushing after meals and at bedtime and the use of ordered oral rinses. Children will not willingly do oral care by themselves... if the parents are not there it is the nurse's job to make sure oral care is performed.
- If stomatitis is present consider getting an order for "magic mouthwash" or medicate for pain as needed.
- Understand that stomatitis can extend the entire length of the G.I. tract causing esophageal and gastric pain as well as perirectal breakdown.

**ALTERED SKIN INTEGRITY:** The child with cancer may have altered skin integrity for many reasons:

- Surgical sites: monitor any surgical sites and notify physician of any redness, swelling, discharge or bleeding.
- Monitor central line site and dressing, notify charge nurse or physician of any altered skin integrity at site. Change the dressing if it gets dirty or wet.
- Increased risk of yeast or herpetic infection. These infections can be life threatening and are often the cause of sepsis in the immune compromised child. In report get information on any current skin conditions and notify the doctor of any new rashes, blisters, areas of breakdown or other skin alterations so that cultures can be obtained and treatment begun immediately.

## **PAIN AND PSYCHOSOCIAL ISSUES**

**PAIN:** The oncology child may have pain as a side effect of treatment or as part of his or her oncologic process. Untreated pain decreases the effectiveness of treatment and decreases the quality of life for the patient...untreated pain constitutes negligent practice!

- Assess pain with an appropriate pain-scoring tool every time you do vital signs and PRN. Treat and document effectiveness of therapy. A physician must be notified of ongoing pain.
- Anticipate any painful procedures and prepare ahead of time.
- Notify child-life to be available.
- Anxiety can increase the perception of pain. Notify the doctor if this happens, as they will order adjunctive medications.

## **CHILD LIFE THERAPY AND SOCIAL SERVICES**

**CHILD LIFE:** FVRH has a child life program to help the child and their families cope with a diagnosis of cancer.

- Be aware of any ongoing programs child life may have in place i.e. behavior modification (sticker) contracts, school contracts etc.
- Notify child life of any new oncology patients or changes in the condition of current patients.

**SOCIAL SERVICES:** FVRH social services play a significant role in the families of our oncology patients.

- Notify social services of any newly diagnosed oncology patients, any significant changes in current patients or any impending deaths.
- Please notify social services if conferences are scheduled or changes.
- Be aware if social services provides frequent or anticipated services like Ronald McDonald referrals, meal tickets, bus passes etc.

# NEUTROPENIA

Neutropenia is a reduction in the circulating neutrophils and is defined as an absolute neutrophil count (ANC) of < 1,000 in children under a year of age or < 1,500 in children over one year old. Neutropenia may be a presenting sign in a new leukemia patient. However, we usually anticipate neutropenia as a side effect of chemotherapy. Bone marrow suppression often reaches its lowest point about 7-10 days after therapy (the nadir) as a result of the interruption of the normal replication of the bone marrow cells. A child with neutropenia is at risk for serious bacterial infections, especially if the ANC is < 500. A neutropenic child may be asymptomatic so he/she must be very carefully monitored for signs of infection. Nursing care is critical in preventing infections and identifying potential infections as soon as possible. A diagnosis of Sepsis is considered an oncologic medical emergency!

## NURSING ASSESSMENT AND INTERVENTIONS

**ASSESSMENT:** Because of the risk of severe infection a complete history and assessment should be done immediately upon admission

- Check all current lab tests (often done in the clinic) and calculate the ANC.
- Obtain a history from the admitting parent or guardian regarding any fevers, changes in the child's behavior (fatigue, fussiness) or appetite. Also obtain a history regarding any current medication, including home chemotherapy and the last time the child received chemotherapy or radiation.
- Check the SKIN for: overall integrity (rashes, blisters, areas of redness or swelling). Pay special attention to the skin around the central venous site or anywhere the child may have had an I.V. or venipuncture.
- Check the CARDIOVASCULAR system: Children may easily go into septic shock therefore it is critical to assess their heart rate, pulses, capillary refill, warmth of their extremities and their blood pressure.
- Check the LUNGS for: rate and work of breathing, breath sounds (rales, rhonchi, wheezes or areas of diminished sounds), check for any cough or secretions.
- As much as possible check the Mouth, EARS, and NOSE for: abnormal secretions, odor, redness, lesions or pain.
- Check the G.I/G.U. system as much as possible on admission: Assess the abdomen for bowel sounds, distention, or pain. Examine the perirectal area for skin integrity and ask about diarrhea, constipation, problems with urination or menses.

## **NURSING INTERVENTION**

**DIAGNOSTIC WORKUP:** It is important for the nurse to assist in the diagnostic workup of the neutropenic child. The workup usually includes:

- Blood culture from all central line lumens
- Urinalysis and culture (clean catch)
- Culture of any skin lesions
- Stool studies if diarrhea is present
- Cultures of any nasal secretion (RSV or Influenza)

**CULTURES SHOULD ALWAYS BE OBTAINED PRIOR TO THE START OF TREATMENT**

### **TREATMENT OF THE CHILD WITH SEPSIS**

- Immediately access the central venous line for cultures, and blood work.
- Usually a normal saline bolus will be given if to prevent shock and to treat for any potential hypovolemia associated with fever, vomiting or loss of intake. This bolus should be given within the first hour of admission.
- Antibiotic therapy should also be started within the first hour of admission.
- Any child admitted to the peds floor that has an altered LOC, poor cardiovascular assessment (tachycardia associated with cool extremities or prolonged cap refill) must be assessed by a physician immediately. The onset of severe septic shock may be rapid and PICU care will be required.

## **PREVENTION OF INFECTION IN THE NEUTROPENIC CHILD**

### **NURSING INTERVENTIONS:**

- Monitor daily lab work, esp. any decrease in ANC and notify physician
- Monitor for signs of infection throughout the day. **VITAL SIGNS, INCLUDING BP MUST BE DONE AT LEAST EVERY 4 HOURS!**
- Practice good hand washing and isolation technique with all your patients
- Protect your neutropenic child from exposure by isolating him/her in a private room if the ANC is less than 500. Monitor visitors for infection.
- Use no rectal thermometers or suppositories.
- Practice good mouth care.

### **PARENT TEACHING:**

- Instruct families on how to protect the child from infection
- Instruct the families to contact the oncologist immediately for any fever of 100.4 or higher.
- Instruct the families to notify the doctor immediately if their child appears ill or has chills (even without fever), if the child has mental changes, if the child has vomiting or diarrhea or any new abnormal symptoms such as coughing.
- Instruct the families that they should wash any fresh vegetables or any fruits that don't have peels.

# THE ABSOLUTE NEUTROPHIL COUNT ANC

## The ANC determines the risk for infection

- ANC > 1,500 no significant risk
- ANC = 1,000 to 1,500 minimal risk
- ANC = 500 to 1,000 moderate risk
- ANC < 500 severe risk

To calculate the ANC multiply the total WBC by the number of neutrophils and bands.

For example, the WBC is 4,000, with 20% (0.20) segs and 10% (0.10) bands. Calculate the ANC as follows:

ANC = 4,000 x (0.20 + 0.10) therefore the ANC = 4,000 x 0.30 = 1,200

An easier way to calculate the ANC at Fountain Valley is to take the white count as it is printed for example: WBC = 4.0 x (neuts + bands) x 10 Using the counts in the example you would calculate: 4.0 x (20+10) x 10 = 1,200

# RESOURCES

A variety of books and policy manuals are now stored in the medication room specifically for hem/onc reference and resource. The following is a list of references and resource people to answer your questions:

- Essentials of Pediatric Oncology Nursing: A Core Curriculum
- Chemotherapy and Biotherapy
- Chemo resource book by Kim Warrington
- FVRH Policies and Procedures for Chemotherapy And CVL
- All Clin II nurses with chemo certification should be able to answer your questions or know how to get them answered
- Chris Hokenberry R.N. the oncology nurse for Dr. Ali-Nazir has made herself available as a resource. You can call her during the week at 545-6400.
- If you need to reach Dr. Ali-Nazir, notify the charge nurse and she will be called or paged.

## Posttest

1. Name three items of information that are important to obtain in your daily report.
2. Is stomatitis only located in the mouth or can it spread to other areas of the G.I. tract? YES NO What are some complications caused by stomatitis?
3. What is thrombocytopenia and what are some of its symptoms?
4. If your total WBC count is 1.5 and you have 5 segs and 1 band, what is your ANC and how severe is the risk of immune compromise?
5. Name 3 ways to prevent infection in the severely neutropenic child.
6. Your patient has a fever but is NPO, can you give a Tylenol Suppository? YES NO EXTRA POINT: Why not?
7. Your patient had chemo yesterday and is very nauseated. Should you call the doctor? After all, isn't nausea expected after chemo?
8. Your 10 yr. old patient has been in the hospital for 3 weeks and is expected to stay for at least 2 more weeks. All he is doing is watching videos. Who should you notify, name 3 things that this service does for our children?