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Essential Oncology Facts For the Float Nurse

Hospitals are faced with the challenge of staffing oncology units with nurses who do not routinely work with cancer patients. The Essential Oncology Facts Guide can be used to provide critical information that is specific to each oncology unit and to care of the cancer patient.

The American Cancer Society estimates that 556,000 Americans will have died in 2003 from cancer, making it the second leading cause of death behind heart disease (American Cancer Society, 2002). A national survey of registered nurses practicing in oncology reported that supplemental staffing from temporary staffing agencies, internal float pools, and reassigned nurses is increasingly used in the workplace (Buerhaus, Donelan, DesRoches, Lamkin, & Mallory, 2001). Nurse managers and administrators are faced with the challenge of staffing inpatient oncology units with nurses who do not routinely work with cancer patients. Reassignment to an oncology unit may be seen as a negative experience because it requires nurses to work in unfamiliar territory and care for patients with sometimes-complicated cancer diagnoses. When nurses are given a patient care assignment on an unfamiliar unit, there is not enough time for a lengthy orientation. A brief orientation to an oncology unit may decrease the nurses' anxiety and allow for increased quality patient care (Nicholls, Duplaga, & Meyer, 1996). In an effort to make the float experience less stressful, clinical nurse specialists, charge nurses, and nurse educators can provide oncology-specific information to nurses who come to the unit.

The purposes of this article are to describe the pertinent information needed for oncology unit orientation, and introduce the *Essential Oncology Facts Guide* that provides basic assessment criteria for the care of the oncology patient (see Figure 1). Pertinent information, confirmed by oncology literature and clinical experts, and included in the *Essential Oncology Facts Guide*, is reviewed.

Oncology-specific information necessary for orientation should include critical lab values, neutropenic precautions, common side effects related to chemotherapy and/or radiation therapy, a list of frequently used medications and their indications, use of vascular access devices, chemotherapeutic precautions, and a list of possible oncologic emergencies.

Critical Lab Values

Patients with cancer require regular monitoring of lab values by nurses who will anticipate their health care needs. Nursing interventions can include prophylactic measures if abnormal lab values are noted and addressed quickly. Along with the disease process, for example, chemotherapy and radiation therapy can decrease a patient's white blood cell (WBC) count and lead to leukopenia. Because neutrophils act as phagocytes, a significant decrease in the neutrophil count places a patient

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Table 1.
Critical Values of Electrolytes

Electrolyte	Critical Value
Potassium	<2.5 or >6.5 mEq/L
Sodium	<120 or >160 mEq/L
Calcium	<6.0 or >13 mg/dl
Magnesium	<0.5 or >3.0 mEq/L
Phosphorus	<1 mg/dl

with cancer at high risk for infection. A measure used to assess a patient's risk for infection is the absolute neutrophil count (ANC). The ANC is calculated using the following formula:

$$\text{ANC} = [(\text{segs} + \text{bands})/100] \times \text{total WBC count}$$

ANC less than 500/mm³ places the patient at severe risk for infection, and a count less than 100/mm³ constitutes extreme risk (Lynch, 2000). The patient may receive medications on a daily basis to stimulate WBC production. The nurse should know the ANC prior to medication administration and take appropriate measures to prevent infection.

Anemia occurs when the patient's red blood cells (RBC) are lost or the production rate is decreased; low hemoglobin and hematocrit result. Any abnormal values should be discussed with the primary care provider because the patient with cancer may require blood transfusions before reaching critically low levels. Critical values for hemoglobin and hematocrit are less than 5.0 g/dl and less than 15% respectively (Pagana & Pagana, 2002).

Thrombocytopenia occurs when platelet counts fall below 100,000/mm³. Spontaneous bleeding can occur when platelet levels fall below 20,000/mm³. To avoid an emergent situation, the nurse should report platelet count at 40,000/mm³. The patient with elevated platelets can also develop bleeding if the platelet function is abnormal (Pagana & Pagana, 2002).

Medications that help improve these hematologic conditions are

hematopoietic growth factors or colony-stimulating factors. These agents stimulate red and/or white blood cell production and maturation. The nurse should be aware of administration techniques, expected therapeutic outcomes, and potential adverse effects (Yarbro, Frogge, & Goodman, 2002).

Electrolytes, essential for normal physiologic function of nerves and muscles, are monitored closely in the patient with cancer. Elevated or decreased electrolyte levels can have life-threatening effects. The nurse must anticipate problems such as cardiac dysrhythmias or uncontrolled bleeding and intervene quickly (see Table 1). Intravenous fluids, oral electrolyte supplements, and/or total parenteral nutrition (TPN) can influence electrolyte balances. The nurse must be able to report current lab values and all sources of ingested or parenteral electrolytes to oncology specialists.

Neutropenic Precautions

Neutrophils are essential for phagocytosis of bacteria and cellular debris. The term *neutropenia* indicates a condition in which there is a marked decrease in circulating neutrophils (Otto, 2001). Neutropenia could be related to the cancer pathology or the result of receiving chemotherapeutic agents (Smeltzer & Bare, 2004). Individuals with an absolute neutrophil count of less than 1,000 cells/mm³ are considered neutropenic and are at moderate risk for infection (Pagana & Pagana, 2002). ANC less than 500/mm³ creates a severe risk for the patient, and ANC less than 100/mm³ places the patient in an extreme risk category (Otto, 2001).

An additional criterion affecting the patient with cancer is the nadir period. The term *nadir* represents that period of time when blood levels are at their lowest point. The nadir period varies for each antineoplastic agent. Most nadir periods occur approximately 10 to 14 days after the beginning of chemotherapy treatment or several weeks following radiation therapy, depending on the treatment agent and life span of the particular blood cells (Brown et al., 2001; McKay & Hirano, 1998). Standard drug references should be available and the hospital pharmacist consulted for specific information.

An immunocompromised state makes it difficult for the patient with cancer to combat even minor colds; sepsis can result. When assigned to care for a patient who is neutropenic, the nurse must review guidelines regarding care of an immunocompromised patient. First, the patient should be provided a private room if available. If this is not possible, it is best to avoid roommates with uncontrolled excretion of bodily fluids and patients diagnosed with *Methicillin-resistant staphylococcus aureus*, *Vancomycin-resistant enterococcus*, or *Clostridium difficile* (Otto, 2001; Yarbro et al., 2002). Second, plants and flowers should be avoided. These items collect dust, grow mold, or remain in water creating an increased risk to the patient. Because plants and flowers with get-well wishes are very popular for hospitalized patients, family and visitors must be instructed about the neutropenic status and protective measures. Third, the nurse should be alert to patient meal trays to ensure the food choices and preparations are appropriate. Cooked food is preferred, because bacteria may exist on fresh fruits and vegetables (Otto, 2001). Dietary service personnel should be notified of a patient's immunocompromised status and instructed about their role in infection control. Finally, the patient should wear a mask for personal protection while being transported to other areas of the hospital. Large crowds should be avoided and ill visitors discour-

aged from contact with the patient (Otto, 2001). Young children and babies with immature immune systems are often carriers of infection, and they should be kept at a distance.

It is critical for the nurse to protect the patient from outside factors that lead to sepsis. The nurse should post visible signs on the door of the patient with neutropenia to alert visitors and allied health personnel. The sign should include clear instructions and indicate any special precautions. The nurse is responsible for patient, visitor, and staff education concerning neutropenic precautions.

Common Adverse Effects of Chemotherapy and Radiation

The most common adverse effects of chemotherapy and radiation therapy reported by patients with cancer are fatigue, nausea, pain, and vomiting. Oral stomatitis, bone and joint pain, anorexia, constipation or diarrhea, impaired skin integrity, and alopecia also plague many patients. All patients do not experience these adverse effects; however, the nurse should be aware of assessment criteria and early intervention strategies (Otto, 2001).

Fatigue. Fatigue occurs greater than 70% of the time as an adverse effect of cancer treatment (Nail, 2000). Fatigue can result from the disease process or usual treatments, or it can occur when the patient reaches the nadir period. Clustering patient care activities can reduce fatigue and provide uninterrupted rest periods. A sign on the patient's room door can prompt visitors to check with the nurse before entering.

Nausea and vomiting. Nausea and vomiting occur frequently with the use of chemotherapeutic agents despite new advances in antiemetic medications (Bender et al., 2002). Some chemotherapy drug regimens include antiemetics prior to administration to promote patient tolerance of the treatment. Specific food choices such as gelatin, popsicles, and soft bland food may minimize queasiness (Bender et al., 2002). The patient should be encouraged to

experiment with his or her diet to increase calories. The patient must consume an adequate number of calories to maintain nutrition balance and enhance quality of life. A dietary consult may be helpful in identifying the patient's caloric needs and identifying which foods would be best.

Oral stomatitis. Rapidly dividing cells in the mouth are affected by chemotherapy and radiation treatments, leading to painful mouth sores and chapped lips. *Candida albicans* (yeast) may occur on the tongue and oral mucosa. Often, excess oral secretions make it difficult for the patient to speak clearly or to eat a substantial amount of food. The patient may find relief from sucking on ice chips or popsicles. Several combinations of mouth rinses are also available, depending on the patient's need. For example, the patient with excess secretions may require diphenhydramine (Benadryl®) in a mouth rinse, while the patient with increased pain may need lidocaine (Hannapel, 2002). Another patient may find water and baking soda rinses sufficient. Frequent oral care is vital to preserve mucosal integrity. Individual needs and the extent of the stomatitis should be discussed with the primary care provider to determine the best intervention.

Bone and joint pain. Bone and joint pain increases as cancer advances and as an adverse effect of colony-stimulating factors (Skidmore-Roth, 2003). Analgesics and anti-inflammatory medications, as well as alternative pain relief measures, can be used. Alternative pain relief measures can include guided imagery, music therapy, relaxation exercises, and massage, if appropriate (Yarbro et al., 2002).

Constipation and diarrhea. The disease process, lack of activity, and frequent use of opioids may result in constipation. High fiber food choices, adequate fluid intake, and stool softeners are used to promote regular elimination and help prevent bloating (Smeltzer & Bare, 2004). In contrast, diarrhea can result from frequent use of antibiotics and

antiemetics. Dehydration and the loss of electrolytes, minerals, and nutrients can result. Stool specimens may be collected to determine if an infection has occurred. If no infection is detected, antidiarrheal medications may be ordered. It is important to replace lost fluids, maintain electrolyte levels, and prevent sepsis. In either constipation or diarrhea, the nurse should anticipate the patient's needs and initiate preventive measures.

Delirium. Agitated behavior requiring sedation, also described as delirium, terminal restlessness, mental anguish and agitation, are common problems in cancer patients. Factors such as cachexia, hypoalbuminemia, advanced age, and prior dementia can contribute to this condition. Identification and treatment of delirium may involve such interventions as discontinuation or dose reduction of psychoactive medications, adjustments in fluid administration, or treatment of infections, dehydration, or electrolyte imbalances (Lawlor et al., 2000). Ongoing monitoring and reassessment are critical especially when sedatives, opioids, or other psychoactive medications are required to control patient's symptoms. Changes in the patient's health and mental status, in laboratory values, and symptoms that suggest drug toxicity should be reported promptly to the oncology specialist. A psychosocial intervention for family caregivers of patients with advanced cancer may be beneficial.

Skin integrity. Maintaining skin integrity is a priority during the treatment and healing process of cancer. Irradiated tissue, at risk for skin breakdown and delayed wound healing, should be assessed at least every shift. Chemotherapy and radiation injure the rapidly dividing cells of the skin. A patient with cancer may remain in bed for long periods of time due to fatigue and pain. The underlying effects to the skin may not be visible immediately, and recovery will depend on the patient's response to treatment (Sussman & Bates-Jensen, 2001). Adequate nutrition is also an important component in main-

taining skin integrity. Cancer-associated cachexia, related to inadequate caloric needs and decreased protein intake, can delay wound healing (Sussman & Bates-Jensen, 2001). A skin assessment instrument, such as the Braden Scale, should be used to evaluate the patient each shift and determine specific interventions (Fulton, 2000).

Anorexia. Chemotherapy and radiation treatments affect rapidly dividing cells and can alter taste sensation. Foods once enjoyed by the patient are no longer appealing. Mouth rinses with baking soda and water can be used to soothe the mucosa prior to meals. Megestrol acetate (Megace®) has been used for appetite enhancement in the patient with advanced cancer. Subsequently, the patient can consume more calories and gain weight (Otto, 2001). Liquid nutritional supplements, such as health shakes, can also be offered. The use of TPN may be necessary if other means for nutritional support are exhausted.

Frequently Used Medications

Common oncology medications that may be unfamiliar to the nurse include colony-stimulating factors. The nurse must review lab values and determine when the medications are indicated. Filigastim (Neupogen®) and sargramostim (Leukine®) are used to enhance the WBC count (Pagana & Pagana, 2002). The Food and Drug Administration recently approved pegfiligastim (Neulasta®) for patients with a decreased WBC (Byars, 2002). These medications may be needed if the patient is receiving antineoplastic agents that suppress the bone marrow. Epoetin alfa recombinant (Procrit®) is administered to maintain or increase the patient's RBC level. Positive results with this medication can decrease the need for blood transfusions (Rogers, 2002). Oprelvekin (Neumega®), also known as interleukin 11, is a growth factor that is used to prevent thrombocytopenia following chemotherapy infusion. This medication allows hematopoietic stem cells and the progenitor cells to proliferate, increasing platelet production. As the plasma volume

increases, the nurse may see decreased hemoglobin, decreased serum albumin, and decreased gamma globulins (Spratto & Woods, 2002). The nurse must review lab values and administration routes associated with the use of colony-stimulating factors prior to their administration.

Use of Vascular Access Devices

The proper use of vascular access devices (VADs) requires meticulous care to prevent infection and maintain patency. VADs include long-term catheters (Hickman®, Broviac®, or Groshong®), implantable ports (Port-A-Cath®), implantable pumps (Infusaid®), or peripherally inserted central catheters (PICC) (Carr & Killman, 1995). The VADs are used for administration of antineoplastic agents, total parenteral nutrition (TPN), blood products, intravenous fluids, and medications. These devices require flushing at scheduled intervals to prevent clotting and/or medication interactions. It is important to use the appropriate size syringe when flushing to prevent catheter damage; individual manufacturers of catheters can provide guidelines for maximum pressure limits in pounds per square inch (PSI) (Infusion Nurses Society, 2000). The nurse can obtain information from package inserts and agency policy and procedure manuals. Common solutions and medications used in flushing are normal saline and heparin. Each facility should have a protocol that indicates the amount of flush solution, scheduled interval, and site and tubing care.

If the line develops a fibrin clot, the nurse must intervene immediately. Fibrinolytic agents convert plasminogen to plasmin (fibrinolysin) that is able to break down fibrin. Fibrinolytic agents include urokinase (Abbokinase®), tenecteplase (TNKase®), streptokinase (Streptase®, Kabikinase®), alteplase (Cathflo®, Activase®, t-PA), reteplase (Retavase®), and anistreplase (Eminase®, APSAC). The nurse must follow institution guidelines in administration of these agents.

Scheduled dressing changes

to VADs by the nurse are necessary to decrease the risk of tunnel infection. The facility policy should address supplies and products that should be used to prevent sepsis. PICC-certified nurses have special training to troubleshoot, clean and dress, and "de-clot" these lines. The nurse providing routine care to PICC lines should contact the PICC-certified nurses for assistance with special procedures and catheter problems.

Chemotherapy Precautions

The nurse unfamiliar with chemotherapy administration should not be asked to administer antineoplastic agents when working on an oncology unit. However, it is necessary for the float nurse to be familiar with chemotherapy precautions, which are followed for a period of 48 hours after the patient's last dose of an antineoplastic agent (Otto, 2001). Antineoplastic agents are excreted from the body through fluids such as sweat, vomitus, stool, and urine. The nurse should use personal protective equipment (PPE) for each patient contact. PPE includes masks with face shields or goggles, chemotherapy gloves, and a fluid-resistant gown. Handwashing before and after working with the patient is essential. The nurse should cover the commode or toilet with a disposable drape to prevent fluids from splashing while flushing twice. Specified receptacles for linen and trash disposal must be used. Because family members often wish to help with patient care by emptying urinals and changing soiled linens, they must be instructed on and follow the necessary precautions. The facility should have a policy that stipulates precautions and supplies used to protect the staff, patient, and visitors.

Oncologic Emergencies

Potential emergencies include disseminated intravascular coagulation, syndrome of inappropriate antidiuretic hormone secretion, septic shock, tumor lysis syndrome, hypercalcemia, cardiac tamponade, spinal cord compression, and superior vena cava syn-

drome. The nurse should be aware of critical signs, symptoms, and lab values associated with these emergencies. An experienced oncology nurse must be alerted immediately to assist with interventions.

Disseminated intravascular coagulation (DIC). Approximately 10% of patients with cancer are afflicted by DIC (Yarbro et al., 2002). Characterized by uncontrolled bleeding and rapid consumption of clotting factors, DIC is usually secondary to an underlying disease process or condition such as sepsis, liver disease, blood transfusion reactions, or hepatic failure. Treatment requires "eliminating or altering the triggering event" (Otto, 2002, p. 531). For example, antibiotic administration will be necessary for septic conditions, which are the most common cause of DIC. Oncology specialists may order other treatments, such as platelets, fresh frozen plasma, packed red blood cells, or cryoprecipitate, to control bleeding or replace blood products. Specific lab values to alert the nurse include decreased prothrombin time (PT), decreased activated partial thromboplastin time (PTT), decreased platelet count, decreased fibrinogen level, and increased fibrin split products (Yarbro et al., 2002). The nurse must observe all the patient's orifices and tubes for potential signs of bleeding.

Syndrome of inappropriate antidiuretic hormone (SIADH). Water intoxication associated with this condition creates hyponatremia with serum sodium levels less than 129 mEq/L (Pagana & Pagana, 2002). The patient may complain of headache, nausea, thirst, loss of appetite, fatigue, and muscle cramps. As the situation worsens and serum sodium levels decline to less than 110 mEq/L, the patient can experience seizure activity or become comatose (Yarbro et al., 2002). The nurse should report abnormal serum sodium values and associated symptoms to the oncology specialist early to initiate appropriate interventions.

Septic shock. The oncology

patient often has a vascular access device and requires numerous invasive procedures. If the patient is immunocompromised, an increased risk for infection exists. Although many organisms can contribute to infection, gram-negative bacteria (endogenous flora) are often the cause of the sepsis in the patient with cancer (Yarbro et al., 2002). The patient becomes febrile and may experience shaking and the chills. In addition, the nurse may see decreased blood pressure, decreased oxygen saturation, and organ dysfunction. Identification of early signs and symptoms of infection is best; otherwise, septic shock can occur quickly and result in death (Yarbro, 2002). Timely nursing assessments of change in patient mental status, mild temperature elevation, and laboratory values is essential for quick intervention to treat the infection.

Tumor lysis syndrome (TLS). TLS may affect the individual with lymphoma or leukemia, or a patient with a large tumor burden. Chemotherapy causes the tumor cells to break down quickly. The destroyed tumor cells are released into the bloodstream, resulting in metabolic imbalances of potassium, phosphorus, uric acid, and calcium. The nurse can refer to corresponding lab values for these components to determine hyperkalemia, hyperphosphatemia, hyperuremia, and hypocalcemia (relating to hyperphosphatemia). An assessment of the patient may include complaints of fatigue, nausea, anorexia, and muscle cramps, as well as new onset of vomiting and diarrhea. As the situation progresses, azotemia, laryngospasm, tetany, and convulsions can occur. Interventions to correct the situation may include hydration and diuresis, intravenous administration of sodium bicarbonate, and oral or intravenous doses of allopurinol (Zyloprim®) (Skidmore-Roth, 2003). The nurse will immediately notify an experienced oncology nurse, provide close monitoring of the patient, and ensure that resuscitation equipment is available.

Hypercalcemia. This metabol-

ic condition can be life threatening if not treated promptly. Kidney failure, coma, or cardiac arrest may occur. The nurse should be alert to serum calcium levels greater than 10.5 mg/dL (Smith, 2000). The patient may demonstrate lethargy, restlessness, confusion, vomiting, polyuria, or dysrhythmias. Initial nursing interventions might include oral fluids if tolerated and intravenous hydration as prescribed. Once the patient is adequately hydrated, loop diuretics (such as furosemide [Lasix®]) may be used to promote the excretion of calcium. It is important to avoid the use of thiazide diuretics, which can affect calcium excretion (Smith, 2000).

Cardiac tamponade. Fluid accumulates within the pericardial sac, causing compression of the heart muscle and resulting in inadequate cardiac filling with decreased blood flow to the heart. The nurse will observe tachycardia, jugular vein distention, and diminished pulse pressure (pulsus paradoxus). Beck's triad (elevated central venous pressure, muffled heart sounds, arterial hypotension) is considered a classic sign of this condition (Ferri, 2002). Further assessment may uncover retrosternal chest pain, diaphoresis, nonproductive cough, hoarseness, hiccups, nausea and vomiting, and abdominal pain. Possible interventions include administration of steroids (prednisone) and diuretics (furosemide, spironolactone [Aldactone®], hydrochlorothiazide) (Yarbro et al., 2002). This medical emergency requires close monitoring of vital signs and prompt intervention.

Spinal cord compression (SCC). SCC can occur when the primary tumor directly affects the spinal cord or vertebral column, or it can result from metastatic disease. The pressure on the spinal cord created by tumor growth can lead to neurologic defects depending on the level of involvement. The initial assessment by the nurse may reveal muscle weakness in the form of footdrop or unsteady gait. Sensory impairment includes numbness, tingling, and decreased temperature sensation. Progression of the

Figure 1.
The *Essential Oncology Facts Guide* Can Help Non-Oncology Nurses Who Float to an Oncology Unit to Provide Care to the Patient with Cancer

Front Side

ESSENTIAL ONCOLOGY FACTS

Date: ____/____/____ Charge RN: _____ Nursing Unit: _____ Additional Personnel/Numbers _____
 Blood Bank: _____ Central Supply: _____ CT/MRI: _____
 Pharmacy: _____ Radiology: _____ PICC RN: _____

<p>Critical Lab Values</p> <p><u>Lab Values To Monitor</u> Appropriate notification of abnormal labs should be addressed before reaching critical values</p> <p>WBC <1000 cells/mm³ Hemoglobin <5.0 g/dL Hematocrit <15% or >60% Platelets <20,000/mm³ Potassium <2.5 or >6.5 mEq/L Sodium <120 or > 160 mEq/L Calcium <6.0 or > 13 mg/dL Magnesium <0.5 or >3.0 mEq/L Phosphorus <1mg/dL</p> <p><u>Electrolyte Sources:</u> IV Fluids w/ additives Scheduled oral supplements TPN</p>	<p>Neutropenic Precautions</p> <p><u>When Do I Use Precautions?</u> Precautions are initiated when the Absolute Neutrophil Count (ANC) is < 1000 cells/mm³</p> <p><u>Determine Neutropenia</u> ANC = (Segs + Bands) x WBC 100 ANC < 500 cells/mm³ = severe risk ANC < 100 cells/mm³ = extreme risk</p> <p><u>Nursing Interventions</u> Post precaution sign on door of private room Keep fresh fruits & flowers out of room (check meal trays & visitors bringing food) Patient should wear mask outside room Patient should avoid large crowds & children (hospital lobby, numerous visitors) Educate visitors and hospital personnel</p>	<p>Common Adverse Effects</p> <p><u>Fatigue</u> Cluster activities & ADL's Limit visitors</p> <p><u>Skin Integrity</u> Assess skin each shift Reposition patient every 2 hours Maintain adequate nutrition</p> <p><u>Constipation (C) & Diarrhea (D)</u> Provide high fiber foods (C) Use stool softeners (C) Increase fluid intake (C & D) Replace electrolytes (D) Administer antidiarrheals (D)</p> <p><u>Bone & Joint Pain</u> Administer analgesics/anti-inflammatory medications Suggest alternative measures (relaxation exercises, music, etc.)</p> <p><u>Delirium</u> Ongoing assessment of mental status Monitor symptoms for sedation and drug toxicity Monitor laboratory values</p> <p><u>Oral Stomatitis</u> Offer ice chips or Popsicles Use mouth rinses Provide frequent oral care</p> <p><u>Anorexia</u> Use mouth rinses prior to meals Offer nutritional drinks or shakes TPN</p> <p><u>Nausea & Vomiting</u> Administer antiemetics Experiment with foods Monitor intake & output Consult dietician</p>
<p>Frequently Used Meds</p> <p><u>Colony Stimulating Factors</u> Administer by subcutaneous injection to enhance or maintain blood levels Neupogen (WBC's) Leukine (WBC's) Procrit (RBC's) Neumega (Platelets)</p> <p><u>Fibrinolytic Agents</u> May be ordered for use in de-clotting vascular access devices urokinase tenecteplase streptokinase alteplase anistreplase reteplase</p>	<p>Vascular Access Devices</p> <p><u>Long-term Catheters</u> (Hickman, Broviac, Groshong)</p> <p><u>Implantable Ports</u> (Port-a-Cath)</p> <p><u>PICC</u></p> <p><u>Nursing Interventions/Routine Care</u> Check blood return routinely Flush lines at scheduled intervals using only 10 cc syringe and appropriate flush solution Change dressings (see protocol)</p>	<p>Chemotherapy Precautions</p> <p><u>When Do I Use Precautions?</u> Maintain precautions for up to 48 hours following last dose of chemotherapy</p> <p><u>Nursing Interventions</u> Use PPE when in contact with bodily fluids (chemo gloves, mask w/ face shield or goggles, fluid resistant gown) Use disposable drape to cover commode when flushing twice Use appropriate receptacles when discarding soiled linens and disposable drapes Educate visitors and hospital personnel</p>

Back Side

Oncologic Emergencies

If you suspect any of the following situations is occurring, contact an experienced oncology nurse immediately.

Disseminated Intravascular Coagulation (DIC)

Labs: ↓ PT, ↓ PTT, ↓ platelets, ↓ fibrinogen level, ↑ fibrin split products

S & S: Monitor all orifices, puncture sites, & wounds for bleeding

Syndrome of Inappropriate Antidiuretic Hormone Secretion (SIADH)

Labs: ↓ sodium (<129 mEq/L)

S & S: c/o nausea, thirst, anorexia, fatigue, muscle cramps

Septic Shock

Labs: + Blood cultures, ↑ WBC, ↓ neutrophils, possibly ↑ serum glucose, ↑ cortisol, ↑ catecholamines, and ↑ lactate levels

S & S: ↓ blood pressure, febrile, shaking, & chills ↓ oxygen saturation

Tumor Lysis Syndrome (TLS)

Labs: metabolic imbalances (↑ potassium, ↑ phosphorus, ↑ uric acid, ↓ calcium)

S & S: c/o fatigue, nausea, anorexia, muscle cramps, vomiting, and diarrhea

Hypercalcemia

Labs: ↑ calcium (>10.5 mg/dL)

S & S: c/o lethargy, restlessness, confusion, vomiting, polyuria, ECG changes

Cardiac Tamponade

Labs: diagnostic workup includes hematocrit, K⁺, Ca⁺⁺, and arterial blood gases

Dx. Tests: chest x-ray, ECG, echocardiogram, transesophageal echo (TEE)

S & S: Tachycardia, JVD, ↓ pulse pressure, ↑ CVP, muffled heart sounds, arterial hypotension, retrosternal chest pain, diaphoresis, hiccups, nonproductive cough, hoarseness, N&V, abdominal pain

Spinal Cord Compression

Dx. Tests: MRI scan to distinguish between extradural, intradural, and extramedullary lesions (tissue), CT (bones)

S & S: pain, muscle weakness (foot drop, unsteady gait), sensory impairment (numbness, tingling, ↓ temperature sensation), incontinence

Superior Vena Cava Syndrome

Dx. Tests: abnormal chest x-ray, CT, MRI, possible bronchoscopy with tissue biopsy

S & S: vessel engorgement (head, neck, upper thorax and upper extremities), periorbital edema, JVD, capillary dilation dyspnea, cough orthopnea

condition can lead to paralysis and loss of bowel and bladder control. Interventions are aimed at restoring optimal neurologic function, controlling tumor growth, managing pain, and maintaining spinal stability. Treatments may include steroid use, radiation therapy, or surgery. Notification of an experienced oncology nurse and the physician, and coordination of treatments with the appropriate departments are critical (Yarbro et al., 2002).

Superior vena cava syndrome. A primary tumor, metastatic cancer, or a thrombus can cause compression on the superior vena cava. This creates an obstructed flow, causing venous congestion and decreased cardiac output. The nurse will observe engorgement of the vessels in the head, neck, upper thorax, and upper extremities. Specifically, periorbital edema, jugular vein distention, and capillary dilation will be apparent. Further assessment reveals dyspnea, cough, and orthopnea. It is important to relieve symptoms by addressing the cause of the obstruction. Radiation therapy, chemotherapy, surgery, medications, or a combination of these may be part of the treatment plan. All of these potential oncologic emergencies require astute observation and immediate attention by the experienced oncology nurse (Yarbro et al., 2002).

Essential Oncology Facts Guide

Essential oncology patient information can be presented to the non-oncology nurse in a succinct, usable format that alerts the nurse to potential needs and problems common to patients with cancer. The *Essential Oncology Facts Guide* is designed to summarize critical information on a large index card that can be conveniently carried in the nurse's pocket or as a fact sheet on a clipboard (see Figure 1). The information can be quickly revised if the original document is stored on a computer and printed when the nurse arrives on the unit. The guide contains useful information related to critical lab values, frequently used medications, VADs, precautions,

adverse effects, and interventions. This oncology-specific information is easily retrievable and can alert the nurse to common potential problems. Additional unit-specific information such as phone numbers and/or names of resource personnel can be incorporated into the fact sheet. For example, when a concern regarding drug compatibility arises or a new medication is ordered stat, a unit pharmacist could be contacted directly without making additional unnecessary phone calls or personnel contacts. Problems with PICC lines can be addressed with certified nurses without delays in treatment.

The *Essential Oncology Facts Guide* can be adapted to specific requirements in a variety of oncology settings. It is not meant to be all-inclusive, but to serve as a reference for the nurse who is not familiar with the oncology routine. Clinical nurse specialists, charge nurses, and nurse educators must ensure the information on the fact sheet remains current and relevant to nursing practice at their facility.

Summary

Oncology diagnoses are expected to increase 9% by 2006 (Lyndon-Minton, 2002). "As cancer care becomes more complex, nurses must be prepared to handle the multifaceted needs of people facing the disease" (Haylock, 2000, p. 9). Health care administrators are challenged to readjust their mix of beds and services to accommodate patients with cancer diagnoses. Because the nursing shortage is not going to end soon, and nursing care will remain complex, nurse leaders must move in the direction of educating all nurses to care for patients with cancer. The idea of floating may become a more positive experience for nurses if they are provided with pertinent information that is unit and patient specific. The *Essential Oncology Facts Guide* can be adapted to provide critical information specific to each oncology unit and to the care of the patient with cancer. ■

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1995). You must also deal with the *FUD Factor* (Fear, Uncertainty, and Doubt). You do not have to feel like you are powerless or helpless. Figure out the best solution to the problem. Focus on what you *can* change and control (White, 2004).

Stress is a part of everyday life. Believe in yourself and know that you have the power within you – the confidence, strength, and stamina to cope with stress and enjoy each day to its fullest! ■

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