Nursing Considerations for Patients with Leukemia

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Abstract

Nurses have a unique opportunity to heal, provide comfort, and give support to patients and families affected by leukemia. The diagnosis of leukemia is often a shock to the patient. Treatment is thrust upon the patient, sometimes before the actuality of the situation sets in. Nurses are key to providing knowledge and care to the patient during this whirlwind of medical treatment. Nurses teach the patients and their families about what to expect from their treatments and medications. Nurses monitor the condition of the patient to catch signs of complications early, all the while, providing safety from infection, and comfort from pain. Nurses are vigilant in providing a clean, healing environment and honest information to the patients and families.

Nursing Considerations for Patients with Leukemia

The nurse is an essential element in the healing process of all patients needing care particularly those diagnosed with something as frightening as leukemia. When the patient is first diagnosed, the stress and fear of dealing with cancer can be overwhelming. The nurse is there to support, teach, and provide health care through the induction phase of treatment. The nurse performs the essential baseline assessment and gets a history on the patient. The patient immediately starts aggressive treatment, which can leave them venerable infections, and pain. The nurse diligently monitors the patient’s condition, controls pain, and protects from infection. The nurse knows the side effects and contraindications of the medications leukemia patient’s receive allowing them to catch early signs of complications. The nurse also teaches the patient about follow-up treatments and tests necessary to insure remission.

# Diagnosis Considerations

The diagnosis of leukemia can be a daunting experience for the patient, but the nurse is there with the patient through the process providing care and comfort. Often, patients seek medical care because of bleeding, bruising, bone soreness, and flu-like symptoms. (Becze, 2010) It is the nurse’s responsibility to get a base line assessment and history of the patient. The nurse should also expect to find other possible signs and symptoms such as: tiredness, fever, recurrent infections, swollen lymph nodes, enlarged spleen, loss of appetite, and weight loss. (Meenaghan, Dowling, Kelly, 2012) The nurse will check for bleeding and comorbidities that affect the treatment such as cardiac issues. (Becze, 2010) The nurse will also need to gather lab samples to check for anemia and loss of clotting factors. The labs needed are a complete blood count (CBC), complete metabolic panel (CMP), urine analysis (UA), lactate dehydrogenase, and disseminated intravascular coagulation (DIC). (Becze, 2010) The nurse must continually assess the patient for bleeding through out the diagnosis and treatment processes. The nurse would expect to see a rise in white blood cells but a drop in neutrophils and thrombocytes. (Meenaghan et al, 2012) Bleeding is a very serious risk in these patients. Often, the patient is started on the medication all-trans retinoic acid (ATRA), a vitamin A derivative that helps grow normal hematopoietic cells helping to prevent bleeding, before a conclusive diagnosis is available. (Walker, Held-Warmkessel, 2010) An aspiration biopsy of bone marrow is looked at under a slide to definitively diagnose leukemia. (Meenaghan et al, 2012) The nurse should prevent infection at the biopsy site and give pain medications as ordered. All the test and new medications along with the initial jolt of being diagnosed with leukemia leaves most patients in shock making it difficult to receive further instruction. Many patients interview during their diagnosis and again 2-5 months later admit they could not remember the information given to them during their diagnosis. (Meenaghan et al, 2012) It is the nurses responsibility to instruct the patient on the reason each test is necessary, what to expect during the procedures, and teach the patient about new medications.

## Treatment Considerations1

Chemotherapy will begin after the patient is diagnosed with leukemia. ATRA and anthracycline chemotherapy is the typical first-line treatment to be initiated after diagnosis. (Walker et al, 2010) However, there are some patients who will be contraindicated for this first- line combination of medications. If the patient has used anthracycline for past chemo treatments or if they have a history of cardiac disease, they will instead take arsenic trioxide. (Becze, 2012) Each of these medications put the patient at risk for infection by killing off blood cells allowing new healthy cells to generate. Arsenic trioxide with ATRA can have even more serious side effects. If the patient is on arsenic trioxide the nurse will monitor for differentiation syndrome by assessing for respiratory distress, fever, increased weight, increased white blood cells, pulmonary edema, pericardial effusions, hypotension, congestive heart failure, renal failure and leukocytosis. (Becze, 2012) Arsenic trioxide also prolongs the QT segment causing dysrhythmias, so if the QT segment is greater than 500 msec the nurse should not give the medication. (Becze, 2012) Knowing the affects of the patient’s medication is very important for the nurse to consider during treatment; however, infection is the greatest concern during chemotherapy.

**Infection Considerations***.*

The most common cause of complications and death in patients with leukemia is infection. (Moran, Browning, 2007) The patient is at risk for any opportunistic pathogen that includes bacteria, virus, and candidiasis. The nurse will assess for fever, sweating, candidiasis in the mouth, and collect cultures and labs to find the cause of the infection and then implement the appropriate treatments. (Walker et al, 2010) The patient usually will have a central venous catheter placed for giving the chemo treatments. This catheter is another opportunity for infection. In order to prevent infection the nurse must change the dressing on the catheter site every 48 hours, and change IV tubing and solutions every 72-96 hours. (Smeltzer, Bare, Janice, Kerry, 2010) The patient on chemo usually has their own room to prevent exposure to other people’s pathogens. Reverse isolation rooms with laminar airflow or HEPA are the most efficient in decreasing pathogens. (Meenaghan et al, 2010) The nurse must always follow hand-washing protocols, and wear a mask while caring for the severely immune compromised patient. Other ways to avoid contact transmission of infection are to keep people who had a recent illness or vaccine away from the patient, ask all visitors and healthcare providers to wash their hands before visiting the patient, do not give IM injections, teach the patient to avoid dental work, and do not do rectal or vaginal procedures. (Smeltzer et al, 2010) Since the chemo treatment not only causes immune compromise but also a plethora of discomforts for the patient, the nurse must also implement interventions to provide relief.

Comfort considerations.

There is a stigma that closely associates leukemia and chemotherapy with pain and discomfort. Chemo leaves the patient feeling sick, their hair starts to fall out, their skin changes, and they may feel cut off from human contact because of infection precautions. It is the nurse’s responsibility to provide and teach the patient treatments to relieve pain and provide comfort. The patient’s skin may become erythematous- skin becomes red, flakey and irritated requiring A and D ointment for aided healing. (Smeltzer et al, 2010) The nurse must teach the patient not to scratch, shave, use soaps or cosmetics, avoid tight clothing, and avoid sunlight. (Smeltzer et al, 2010) Wet desquamation is blistered, irritated skin that requires prescribed ointments for healing. (Smeltzer et al, 2010) The nurse should warn the patient to avoid washing the affected area’s too much, do not pop the blisters, and consult a physician if eschar forms. (Smeltzer et al, 2010) Patients receiving chemo often have gastrointestinal issues like nausea, vomiting, and constipation from painkillers. The nurse should encourage the patient to report these symptoms so they can be managed before the patient becomes malnourished. The nurse can treat these symptoms with anti-emetic, appetite stimulant, and laxative medications, decrease odors that may perpetuate the nausea, provide small nutritious meals, and work with a dietitian to increase the patient’s intake of nutrients. (Smeltzer et al, 2010) These interventions will help to prevent anorexia and wasting syndrome. Pain is a major issue for patients with leukemia. The pain can be debilitating for the patient so strong pain killers are prescribed. The nurse must ask the patient about the intensity, duration, location, character, and frequency. (Smeltzer et al, 2010) The nurse can help alleviate the patient’s pain by decreasing stimuli, teaching distraction techniques, and administering prescribed opioids analgesics around the clock to control the pain. (Smeltzer et al, 2010) Other discomforts the patient may feel are related stress and anxiety about the treatments. The nurse can help the patient cope with these dilemmas by encouraging communication and establishing trust with the health care team. (Smeltzer et al. 2010) The nurse should always encourage the patient with honestly about the patient’s future.

Final stages and long-term effects.

The final result of treatment can be either remission, failed treatment. This is another emotional time for the patient. After two treatments of ATRA, anthracycline treatment, 95% of patients go into remission, but some patients at a higher risk need one or two additional treatments of cytarabine. (Walker et al, 2010) The nurse is there to provide support and teach the patient about follow-up care. The patient may have physical changes because of the treatment like hair loss or scars. It is important for the nurse to validate the patient’s feelings and encourage the patient and family members to talk openly about their concerns and make decisions about their care. (Smeltzer et al, 2010) Opening discussions and allowing the patient to make decisions helps boost their confidence and self-worth. If the patient is a child, the treatment could have long-term effects on neurocognition. (Meenaghan et al, 2012) The nurse may refer the family to physical therapy. If the treatment has failed and the patient is dying, the nurse provides support and provides honest information about the scheduled course of end stage care. (Meenaghan et al, 2012) The nurse is invaluable in the care of the patient and family during the tumultuous trial of dealing with leukemia. Whether the treatment was successful or not, the care provided by the nurse insures contentment in the patient’s future.

Conclusion. Nursing considerations for a patient with leukemia ensures the patient is as comfortable and safe as possible. The nurse supports and teaches the patient through the process of diagnosing leukemia. The nurse monitors the patient through out treatment and is aware of high-risk complications related to infection or harsh medications. The patient’s comfort is compromised, and the nurse provides comfort and relief. At the end of treatment, the nurse educates the patient and family about follow-up and what to expect. The nurse braces the patient for the future giving them confidence and encouragement.

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