



Journal of Oncology

**NAVIGATION & SURVIVORSHIP**<sup>®</sup>The Official Journal of the Academy of Oncology Nurse & Patient Navigators<sup>®</sup>

# BEST PRACTICES

## IN PATIENT NAVIGATION

*SUPPORTIVE CARE EDITION*

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### HIGHLIGHTS

- ▶ Opportune timing for initial patient interaction and/or community outreach
- ▶ Considerations in testing, patient readiness, and pre-education
- ▶ Counseling patients through the implications of their disease and possible impact on life goals
- ▶ Exploring potential communication barriers among the cancer care team throughout the treatment process
- ▶ Addressing the intricacies of survivorship planning

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# Supportive Care in the Oncology Setting



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There are numerous complications that may develop in patients with cancer; some are related to the disease itself, whereas others are associated with agents or combination regimens used during the course of treatment. As members of the multidisciplinary cancer care team, oncology nurse navigators (ONNs) must understand these complications and be armed with effective interventions to support patients throughout the continuum of care. This article addresses issues related to 2 complications that commonly occur in patients with cancer: myelosuppression and pain.

## Myelosuppression

Myelosuppression can be a major complication associated with cancer and its treatment.<sup>1</sup> The National Cancer Institute defines myelosuppression as “a condition in which bone marrow activity is decreased, resulting in fewer red blood cells (RBCs), white blood cells (WBCs), and platelets.”<sup>2</sup> Decreased RBC production may result in anemia and fatigue, whereas decreased WBC production places patients at risk for infection and sepsis. Patients with decreased platelet production are at greater risk for bleeding and hemorrhage.<sup>1</sup>

**An important management strategy is to identify patients who are at high risk for developing anemia and evaluate their symptoms.**

## Overview of Anemia

It is estimated that 30% to 90% of patients with cancer develop anemia.<sup>3</sup> The majority of anticancer therapies destroy rapidly dividing cells, and since RBCs have relatively rapid growth rates, they are often affected. The protein in the RBC that carries oxygen throughout the body is called hemoglobin. When hemoglobin levels are low, oxygen levels are decreased, and the body must work harder to function, which results in fatigue. Normal hemoglobin and hematocrit values vary between men and women, as shown in **Table 1**.<sup>4</sup>

**Table 1** Normal Hemoglobin and Hematocrit Values by Sex

	Women	Men
Hemoglobin, g/dL	12-16	14-18
Hematocrit, %	36-48	40-54

*Source:* Billett HH. Hemoglobin and hematocrit. In: Walker HK, Hall WD, Hurst JW, eds. *Clinical Methods: The History, Physical, and Laboratory Examinations*. 3rd ed. Boston, MA: Butterworths; 1990.

Some chemotherapeutic agents have more powerful myelosuppressive effects than others. For example, in a 2006 study, Barrett-Lee and colleagues discovered that patients treated with platinum-based chemotherapy had double the risk for anemia compared with patients who received other types of chemotherapy.<sup>5</sup> In addition to the type of chemotherapy used, low baseline hemoglobin and tumor type were also risk factors for cancer-induced anemia. Specifically, these investigators reported that patients with lower baseline hemoglobin levels ( $\leq 12.9$  g/dL in women and  $\leq 13.4$  g/dL in men) had an almost 4 times greater risk for anemia after chemotherapy. Furthermore, patients with lung cancer or gynecologic cancer had a 3 times greater chance of becoming anemic, compared with patients who had gastrointestinal (GI)/colorectal cancer.<sup>5</sup>

Patients who have received concurrent chemotherapy and radiation are also at higher risk for developing anemia. According to results from a 2004 European Cancer Anaemia Survey, 50% of patients with lung cancer who received concurrent chemotherapy and radiation had anemia, compared with 39% of patients who received only chemotherapy and 32% of those who received only radiation.<sup>6</sup>

## Managing Patients with Anemia

An important management strategy is to identify patients who are at high risk for developing anemia and evaluate their symptoms. General principles of management include identifying and treating the underlying cause of the anemia and weighing the risks and benefits of transfusion and the administration of erythropoiesis-stimulating agents (ESAs).<sup>7</sup>

Transfusion can provide a rapid improvement in symptoms, but patients and clinicians must be aware of possible adverse effects related to this procedure, including the risk for viral transmissions (eg, HIV and hepatitis C), circulatory overload, fatal hemolysis, and febrile nonhemolytic reactions. Typically, asymptomatic patients are transfused to maintain a hemoglobin level between 7 g/dL and 9 g/dL, symptomatic patients with hemorrhage are transfused to maintain hemodynamic stability, and symptomatic patients with a hemoglobin level <10 g/dL are transfused to maintain a level between 8 g/dL and 10 g/dL.<sup>7</sup>

The US Food and Drug Administration (FDA) has approved 3 ESAs for the treatment of patients with anemia.<sup>8</sup> These agents work by stimulating the bone marrow to produce RBCs.<sup>8</sup> Although ESAs may lessen the need for transfusion, their use is associated with some serious risks.<sup>9</sup> These include lower survival rates, decreased time to progression (most notably in patients with a target hemoglobin level >12 g/dL), and increased risk for thrombosis in patients with a history of coagulopathy disorders or coronary artery disease, patients who are obese, and those on certain medications (eg, hormone therapy).<sup>9</sup> Prior to administration of ESAs, patients must sign an informed consent form stating that they understand the risks and benefits of treatment.<sup>9</sup> In addition, providers must complete a Risk Evaluation and Mitigation Strategy training program before they can prescribe these agents.<sup>9</sup>

The goals of ESA therapy are to use the lowest dose possible to avoid RBC transfusions and to keep the patient's hemoglobin level below 10 g/dL. Dose reductions are required if a patient's hemoglobin level rises more than 1 g/dL in a 2-week period.<sup>7</sup>

## The goals of ESA therapy are to use the lowest dose possible to avoid RBC transfusions and to keep the patient's hemoglobin level below 10 g/dL.

Patients with anemia may benefit from a referral to physical or occupational therapy, where they can participate in cancer fatigue programs and learn energy conservation and self-care techniques. They should also be educated on the following signs and symptoms of anemia, which should be immediately reported to the healthcare team<sup>10</sup>:

- Weakness or fatigue
- Dizziness
- Headache
- Shortness of breath or difficulty breathing
- Palpitations or rapid heart beat

- Pale skin
- Feeling cold, particularly in the hands and feet.

### Overview of Neutropenia

Neutrophils are the most prevalent types of WBCs, which help the body's immune system protect against infection. A normal absolute neutrophil count (ANC) is between 2500 mm<sup>3</sup> and 6000 mm<sup>3</sup>.<sup>11</sup> The ANC can be calculated with the following formula<sup>12</sup>:

$$\text{ANC} = \text{WBC} \times \text{total neutrophils} \times 10.$$

## The risk for severe chemotherapy-induced neutropenia is greatest in the first cycle of chemotherapy.

Neutropenia is defined as an ANC <500 cells/mm<sup>3</sup> or an ANC that is expected to decrease to <500 cells/mm<sup>3</sup> during the next 48 hours.<sup>13</sup> The lower the neutrophil count, the higher the risk for infection.<sup>11</sup> Neutropenia is the most common dose-limiting toxicity associated with chemotherapy.<sup>11</sup> WBC counts are most likely to be at their lowest point (also called nadir) 7 to 10 days after treatment.<sup>11</sup>

Several factors may increase a patient's risk for neutropenia. These include older age, poor performance status, advanced disease, certain comorbidities, low baseline blood cell counts, low body surface area/body mass index, treatment with myelosuppressive chemotherapies, and specific genetic polymorphisms.<sup>14</sup> The risk for severe chemotherapy-induced neutropenia is greatest in the first cycle of chemotherapy.<sup>7</sup>

### Managing Patients with Neutropenia

Patients with neutropenia must be educated on strategies for preventing and minimizing infection. These include frequent hand washing; avoiding large crowds, persons who are sick, and those who have recently been vaccinated; avoiding the handling of animal waste; keeping central catheter sites clean and dry; good oral hygiene; avoiding excess sun exposure; being careful not to cut oneself; and checking with the healthcare team before undergoing dental work.<sup>11</sup>

Febrile neutropenia is defined as an ANC <1000 cells/mm<sup>3</sup> with either a single oral temperature of 101°F or a sustained temperature of 100.4°F for longer than 1 hour. During chemotherapy, febrile neutropenia may be the only indication of a severe underlying infection, because signs and symptoms of inflammation are typically reduced. Therefore, the standard of care for high-risk patients with febrile neutropenia is hospitalization for empiric administration of antibiotics. High-risk patients are those who are expected to have prolonged febrile neutropenia (>7 days)

and/or those who have significant comorbidities, including hypotension, pneumonia, new-onset abdominal pain, or neurologic changes.<sup>13</sup>

Prophylactic use of colony-stimulating factors is recommended if the planned chemotherapy regimen has been associated with a  $\geq 20\%$  risk for febrile neutropenia.<sup>7</sup> A list of these regimens is available in the National Comprehensive Cancer Network (NCCN) guidelines for use of myeloid growth factors.<sup>15</sup> Three colony-stimulating factors have been approved by the FDA, and their recommended dosages are incorporated in the NCCN guidelines.<sup>15</sup> Common side effects associated with these agents are bone pain, myalgias, and arthralgias.<sup>15</sup> Bone pain is usually treated with a nonsteroidal anti-inflammatory agent and an antihistamine for 48 to 72 hours.<sup>7</sup> Prophylactic use of antibiotics is considered only in patients at very high risk for developing neutropenia or in those with hematologic malignancies.<sup>7</sup>

If febrile neutropenia does occur, it is considered a medical emergency, and prompt assessment and intervention is essential. In particular, it is necessary to assess the patient's oncologic history, including chemotherapy and radiation treatments, current medications, and recent exposures to illness. In addition, a physical examination is essential, which should include assessing vital signs (especially temperature) and evaluating for changes in other body systems that may indicate an infection. Management involves implementing an organization-specific febrile neutropenia protocol, which should include obtaining blood/urine/in-dwelling catheter cultures, chest x-ray, and viral/vancomycin-resistant enterococcus swabs if indicated. Prompt administration of antibiotics is essential to prevent further deterioration of the patient's condition.<sup>7</sup>

### Overview of Thrombocytopenia

The role of platelets is to prevent bleeding and blood loss by adhering to small breaks in the blood vessels and initiating the clotting cascade.<sup>16</sup> A normal platelet count is between 150,000/ $\mu\text{L}$  and 400,000/ $\mu\text{L}$ .<sup>17</sup> Platelets are manufactured by the megakaryocytes in the bone marrow and form the myeloid stem cells in the bone marrow.<sup>7</sup> Their normal life span is 10 to 12 days but may be as short as 24 hours in stressful times.<sup>7</sup>

Thrombocytopenia is defined as a decrease in the number of circulating platelets to  $< 100,000/\mu\text{L}$ .<sup>17</sup> It is important to identify patients at risk for this condition using the standardized grading scale for bleeding developed by the World Health Organization (WHO; **Table 2**).<sup>18</sup>

### Managing Patients with Thrombocytopenia

The American Society of Clinical Oncology (ASCO) recommends that patients with thrombocytopenia receive prophylactic platelet transfusion to reduce the risk for hem-

**Table 2** World Health Organization Bleeding Scale

Grade 0: no bleeding
Grade 1: petechial bleeding
Grade 2: mild blood loss (clinically significant)
Grade 3: gross blood loss, requires transfusion (severe)
Grade 4: debilitating blood loss, including retinal or cerebral bleed
Source: Weibert K, et al. <i>Haematologica</i> . 2006;91:1530-1537.

orrhage.<sup>19</sup> According to ASCO guidelines, patients with leukemia or solid tumors who have chemotherapy-induced thrombocytopenia should receive prophylactic transfusion when their platelet count falls below 10,000/ $\mu\text{L}$ .<sup>19</sup> Patients undergoing surgery or certain other invasive procedures, such as placement of a central catheter, should receive prophylactic transfusion if the platelet count is  $< 40,000/\mu\text{L}$  to 50,000/ $\mu\text{L}$  prior to the procedure.<sup>19</sup> Therapeutic transfusions should be given when there is active bleeding of grade  $\geq 2$  according to the WHO scale.<sup>20</sup>

Four types of platelet transfusions may be used to treat thrombocytopenia.<sup>7,19,21</sup>:

- Single-donor platelets come from a single donor who undergoes apheresis. This process yields about 200 mL and is time-consuming for the donor, as the process can take up to 2.5 hours. This process is also more costly than other platelet transfusions
- Random-donor platelets come from multiple donors and are centrifuged from whole blood. The benefit of this process is that it yields a larger volume and exposes the patient to a variety of donors

## The American Society of Clinical Oncology recommends that patients with thrombocytopenia receive prophylactic platelet transfusion to reduce the risk for hemorrhage.

- Leukocyte-depleted platelets are used to reduce the risk of leukocyte-mediated adverse reactions. In this process, leukocytes can be separated/filtered from the blood to prevent an adverse reaction, since leukocytes are recognized as foreign cells by the recipient's immune system
- For patients who have failed to respond to 2 ABO-compatible platelet transfusions, ASCO recommends transfusion of platelets from donors who have been matched for human leukocyte antigen (HLA)-A and HLA-B.

There is only 1 thrombopoietic growth factor approved by the FDA specifically for patients with chemotherapy-

**Table 3** Signs of a Low Platelet Count

Excessive bruising of the skin
Tiny, pinpoint red spots on the skin (ie, petechiae)
Bleeding gums
Nosebleeds that will not stop
Excessive bleeding from a small cut (or bleeding that will not stop even after pressure has been applied)
Dark-colored urine or blood in the urine
Blood from the rectum or stool or black-colored stool
Menstrual bleeding that is heavier than usual, lasts longer than usual, or occurs between periods

induced thrombocytopenia.<sup>22</sup> This drug is a recombinant interleukin-11 that stimulates the bone marrow to produce platelets.<sup>22</sup> It has been shown to decrease the need for platelet transfusions in patients who underwent platelet transfusion in a prior cycle, then received additional chemotherapy.<sup>23</sup> However, this agent has substantial side effects that make it unacceptable for most patients.<sup>23</sup>

In patients with thrombocytopenia, it is important to obtain an oncologic history, including chemotherapy, radiation treatments, and current medications. Physical examination should include assessment for bleeding. In addition to assessing for petechiae and bruising, it is important to assess for bleeding from body orifices (eg, bleeding gums, epistaxis, vomiting, hematuria, or bloody stools).<sup>7</sup>

**Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.**

Patients should be advised on the signs of a low platelet count (Table 3) and when to report these symptoms to their healthcare providers.<sup>16</sup>

Self-care interventions related to thrombocytopenia can be taught to patients and their caregivers to help them become more aware of measures that may decrease the risk for this condition<sup>16</sup>:

- Brush teeth gently with a soft bristle toothbrush or a soft toothette to clean teeth and gums
- Rinse mouth after each meal with a baking soda solution (2 tsp baking soda to 8 oz of water)
- Do not use dental floss
- Avoid commercial mouthwashes that contain alcohol, which can dry out the mouth and lead to bleeding

- Use petroleum jelly or other lip balms to keep lips moist and to prevent cracking
- Take sips of water or juice frequently for a dry mouth
- Modify feminine hygiene practices: use sanitary napkins rather than tampons during menstruation, and avoid vaginal douching
- Do not blow the nose too hard
- Avoid straining too much with bowel movements (use a stool softener or laxative if constipation occurs)
- No rectal thermometers, suppositories, or enemas
- Use an electric razor for shaving (do not use a straight-edge razor)
- Notify the healthcare team before scheduling any dental work
- Do not take medications that affect blood clotting (eg, aspirin or aspirin-containing products)
- Do not take any nonsteroidal anti-inflammatory medications
- Avoid lifting heavy objects or strenuous activity, including sports and activities that could result in falling and/or injury (eg, bicycling, roller-blading, skating, skiing)
- Drink 8 to 10 glasses (8 oz each) of nonalcoholic fluid a day to keep the mouth moist, avoid constipation, and keep the intestinal lining in good condition
- Wear shoes or slippers at all times to protect the feet
- Avoid tight-fitting clothing
- Speak with your healthcare team about the safety of sexual activity as it relates to a low platelet count. Vaginal or anal penetration (including toys/props) or oral sex may pose a risk for bleeding. Use a water-based lubricant and avoid vigorous thrusting during sexual intercourse
- Assess the environment for obstacles that could cause injury.

### Cancer-Related Pain

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. It may be described as causing a vague discomfort or significant distress, or may be stabbing, aching, pinching, throbbing, or shooting in nature. There are many types of pain that a patient may experience<sup>24,25</sup>:

- **Acute pain** is temporary and lasts for a relatively short time, usually  $\leq 6$  months. It is usually confined to 1 area, is easy to describe, and has an identifiable cause, such as surgery
- **Chronic pain** is persistent or recurrent pain beyond the usual course of an acute illness or injury. It is not always confined to 1 area and can be difficult to describe. Frequently, patients with chronic pain “do not look like they are in pain”
- **Breakthrough pain** is defined as transient pain that may

be severe or at least above the patient's baseline pain level

- **Somatic pain** refers to pain that comes from a bone, a joint, or connective tissue. It is often described as sharp and throbbing, and its location is easily identified by the patient
- **Visceral pain** comes from stimulation of the pain fibers secondary to distention, compression, or infiltration into the abdominal or thoracic tissue. Patients frequently describe this pain as diffuse, aching, or cramping, and it is not easily localized. It often occurs due to tissue obstruction of the GI tract, liver metastases, or impaired blood flow to the organ involved
- **Neuropathic pain** results from compression, inflammation, ischemia, or injury to the peripheral, sympathetic, or central nervous system. Patients will describe this pain as numbing and tingling if it is related to the peripheral nervous system. If the pain is centrally mediated, then the patient will describe shooting and radiating sensations with burning and aching. This type of pain may occur if the patient develops a spinal cord compression, plexopathy, or peripheral neuropathy.

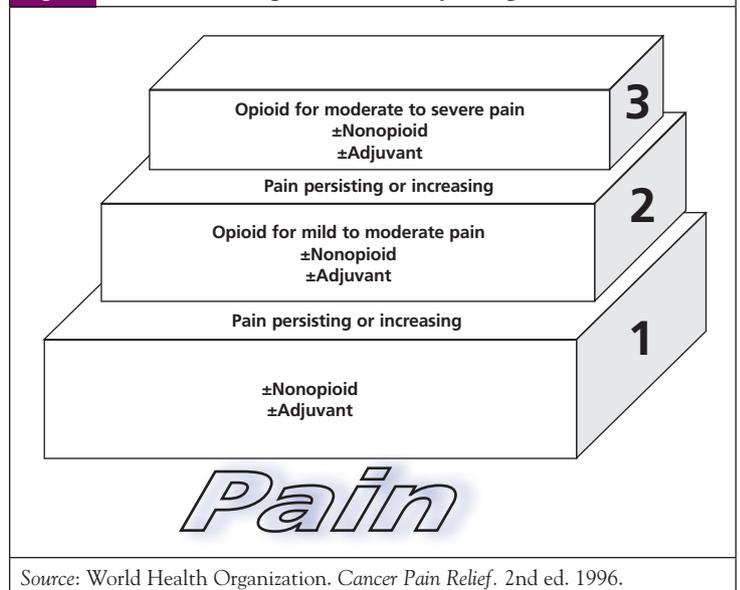
Cancer-related pain is a combination of acute and chronic pain that is associated with direct tumor involvement or treatment. Disease-related cancer pain occurs most often in patients with head and neck cancer, gynecologic malignancies, or GI cancer. Bone metastases are also a source of cancer-related pain. The most common malignancies that cause bone metastases are multiple myeloma and lung, breast, and prostate cancers. Bone pain is a result of compression of the bone on surrounding nerves or direct destruction of the bone itself.<sup>24</sup>

## Neuropathic pain results from compression, inflammation, ischemia, or injury to the peripheral, sympathetic, or central nervous system.

The use of certain agents places patients at a greater risk for developing treatment-related pain from mucositis. These agents include platinum-based chemotherapy, antimetabolites, alkylating agents, and taxanes.<sup>26</sup> Other chemotherapeutic agents may pose a risk for peripheral neuropathy. These agents include vinca alkaloids, platinum-based therapies, taxanes, and some target therapies.<sup>27</sup>

Radiation therapy may also cause treatment-related pain. Patients receiving radiation to the head and neck area are at risk for mucositis that may affect the entire GI tract.<sup>26</sup> This side effect usually occurs 2 to 3 weeks after the start of treatment and may cause severe pain and affect the patient's ability to eat and drink.<sup>26</sup> Radiation therapy may also cause

**Figure** World Health Organization 3-step analgesic ladder.



Source: World Health Organization. *Cancer Pain Relief*. 2nd ed. 1996.

severe skin changes that are very painful, such as radiation dermatitis and radiation recall.<sup>24</sup>

Many surgical procedures used to treat cancer may result in chronic pain. One chronic pain syndrome is postmastectomy pain, where the patient experiences tightness and difficulty moving the operative side. Patients who have undergone head and neck surgery or a thoracotomy also experience this type of pain.<sup>24</sup>

Pharmacologic pain management needs to be individualized based on the 3-step analgesic ladder. This ladder was originated by WHO to describe its guidelines for the use of drugs in the management of patients with pain (Figure).<sup>28</sup> It was originally applied to the management of cancer-related pain, but it is now widely used for the management of all types of pain. The general principle is to start with  $\geq 1$  drugs on the "first rung," then "climb the ladder" if pain is still present. Medications range from over-the-counter drugs with minimal side effects at the lowest rung to powerful opioids at the highest rung. Prescribers should start with the least invasive route, which is oral agents, and alter routes and dosages as needed. Sometimes just changing the opioid (opioid rotation) may benefit the patient. Long-acting opioids should be used when the patient experiences constant pain. Breakthrough pain needs to be managed when intermittent episodes of pain occur along with the patient's constant pain. If the patient is experiencing incident pain, which may occur with a specific event, premedicating before the event will be helpful in decreasing the pain. Any patient who is taking an opioid for pain also needs to be on a bowel regimen to avoid constipation. Other side

effects of opioids, such as nausea, also must be managed.<sup>28</sup>

Other interventions for pain management include bisphosphonates, for relief of osteolytic lesions, and radionuclides, for relief of metastatic bone lesions. Intraspinal analgesia may also provide pain relief and can be given in lower doses with fewer side effects than other analgesics. Radiation therapy is used to alleviate pain associated with bone metastases and to decrease the size of a large tumor that may be causing pain. Nerve blocks may be used for localized pain syndromes.<sup>25</sup>

Cancer rehabilitation may help in decreasing pain and increasing functional status. Ideally, prehabilitation should be implemented prior to treatment to help minimize the pain associated with therapy and help maintain functional status during therapy.<sup>29</sup>

There are also many complementary and alternative nonpharmacologic methods used in pain management. Acupuncture may be helpful in relieving the pain associated with cancer treatments. This ancient Chinese medical technique is used to promote or restore health by inserting fine-gauge needles in specific points in the body to increase energy flow. Reiki, yoga, and massage therapy may also be used to help relieve pain. These therapies may assist in decreasing the emotional and physical tension caused by the disease. Guided imagery, meditation, and biofeedback, among other therapies, may help with stress reduction, resulting in better pain management. Counseling and support groups may also be instrumental in the management of stress, depression, and pain.<sup>25</sup>

There are many more nonpharmacologic therapies that patients may use to help manage the emotional, spiritual, and psychological aspects of pain. It is important for ONNs to know which therapies patients are participating in and to provide education related to the various types of therapies used to relieve pain.

Nursing management includes providing education to

## Counseling and support groups may also be instrumental in the management of stress, depression, and pain.

patients and caregivers on ways to manage and prevent pain. Assessments should include an oncologic history, including chemotherapy, radiation treatments, and current medications. To get patients on the right pain-relieving regimen, it is essential to complete a thorough pain assessment that focuses on all domains of care, including physical, social, spiritual, and psychosocial. Pain is assessed using a scale of 0 to 10, with 0 being no pain and 10 being the worst pain. Assessments should be done prior to the dose of med-

ication as well as 30 minutes posttherapy to ascertain the effectiveness of the intervention.<sup>25</sup>

Educating patients on important safety issues surrounding the proper use and disposal of pain medications is critical. Some of the issues to cover include<sup>30</sup>:

- Refrain from taking any medications, even over-the-counter medications, without first checking with your doctor or nurse
- Take the medication as prescribed. Most pain medications start to work in 30 to 60 minutes and can last up to 46 hours. Other medications, such as the anticonvulsants and antidepressants used to treat some types of pain, take a few days to begin working

## Educating patients on important safety issues surrounding the proper use and disposal of pain medications is critical.

- Take the medication when the pain begins. Waiting until the pain is severe before taking the medication will make it more difficult for the medication to work, and it may not be as effective and may take longer to work
- Keep a record of how often you take your pain medication and how much relief you feel. This should be shared with the healthcare team so that they can evaluate the effectiveness of the pain management regimen
- Use a daily laxative while taking opioids (unless contraindicated due to a previous medical condition).

Patients should also be advised to report any of the following to the healthcare team<sup>30</sup>:

- New pain, especially if it is persistent or severe
- An increase in the amount or frequency of pain
- Pain that does not improve after taking pain medication or returns before the next scheduled dose
- Difficulty with side effects from pain medications (eg, sleepiness, nausea, constipation)
- Ineffective laxative (no bowel movement for <2 days OR hard/painful bowel movements)
- Pain that is accompanied by numbness, tingling, or weakness of the arm or leg; difficulty walking, urinating, or having a bowel movement.

## Conclusion

Nurses and ONNs play an important role in managing and supporting patients throughout cancer treatment. Nurses are often the first point of contact for patients and possess strong assessment skills and knowledge of cancer treatments and their side effects. ONNs are key members of

the healthcare team, as they help patients understand their plan of care and transition through the cancer continuum by providing support, advocacy, and education to reduce barriers to care. \*

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In Partnership with



# The Role of the Oncology Nurse Navigator in Improving Supportive Care



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A nurse/patient navigator is defined by the Academy of Oncology Nurse & Patient Navigators as “a medical professional whose clinical expertise and training guides patients and their caregivers to make informed decisions, collaborating with a multidisciplinary team to allow for timely cancer screening, diagnosis, treatment, and

**One responsibility of the ONN is patient education regarding the potential causes of anemia and options for managing the condition.**

increased supportive care across the cancer continuum.”<sup>1</sup> In essence, nurse navigators guide patients through the health-care system and help them to overcome barriers to optimal care.<sup>2</sup> The navigation of patients with cancer requires extensive knowledge, specialized skills, and good clinical judgment, which can improve outcomes.<sup>3,4</sup> Oncology nurse navigators (ONNs) must be able to recognize and address numerous complications that occur during and after treatment, including myelosuppression and pain.

## Myelosuppression

Myelosuppression is one of the most significant complications of cancer and its treatment.<sup>5-7</sup> Specific types of myelosuppression include anemia, thrombocytopenia, and neutropenia. The management of anemia may involve the use of transfusions, erythropoietin growth factors, and vitamin repletion.<sup>8</sup> One responsibility of the ONN is patient education regarding the potential causes of anemia and options for managing the condition. Patients must understand the importance of correcting anemia and be given strategies for minimizing symptoms. The ONN is also instrumental in educating patients on the risks and benefits of transfusions and erythropoietin growth factors, which can help them decide between these 2 supportive care options.<sup>5,8</sup> Educat-

ing patients on fatigue management programs may also guide patients to resources that will help them manage fatigue related to anemia and other factors.<sup>9</sup>

Patients who are prescribed chemotherapy, or those whose bone marrow is affected by malignancies, may experience thrombocytopenia. Currently there is no available growth factor that can be routinely used for stimulating the growth of platelets, and patients with severe thrombocytopenia may require platelet transfusion.<sup>10</sup> Prophylactic platelet transfusions are sometimes appropriate for patients who have chemotherapy-induced thrombocytopenia and those with thrombocytopenia who are scheduled for surgery or other invasive procedures.<sup>11</sup> The role of the ONN includes educating the patient on the steps involved in platelet transfusion, the duration of benefit from this procedure, potential complications, and thrombocytopenia precautions, which include avoiding injury that may lead to bleeding.<sup>8</sup>

**Patients who are prescribed chemotherapy, or those whose bone marrow is affected by malignancies, may experience thrombocytopenia.**

Neutropenia is a common complication in patients with cancer who are undergoing chemotherapy. This condition may be the result of bone marrow suppression or bone involvement with malignant cells. The prophylactic use of granulocyte colony-stimulating factors (G-CSFs) has been shown to reduce the incidence, length, and severity of chemotherapy-induced neutropenia.<sup>6</sup> The role of the ONN in this setting may include advising patients on the potential risk for developing neutropenia, precautionary measures, the importance of monitoring blood counts, and the implementation of G-CSFs. In addition, the nurse navigator may assist patients in obtaining G-CSFs for self-injection, to

avoid repeated trips to the medical care facility for treatment. Strategies for minimizing side effects related to G-CSFs are also an important component of education. Patients who are at risk for developing neutropenia must also be taught the importance of preventing infection.<sup>7,8</sup>

The prevention of myelosuppression and its complications should begin at the planning phase of treatment and continue throughout therapy and potentially beyond, if symptoms persist after treatment. Once treatment is under way, the ONN can also serve to communicate symptoms and other information (eg, insurance issues, learning issues that may impact self-injection) to other members of the oncology team to promote optimal care.

## Patients who are at risk for developing neutropenia must also be taught the importance of preventing infection.

### Pain

Unmanaged pain has been identified as a major barrier in the overall care of patients with cancer.<sup>12</sup> It is estimated that >70% of patients with cancer will experience chronic pain associated with their disease and that the majority of these individuals will receive inadequate interventions for this pain.<sup>12</sup> Effective pain management requires a comprehensive approach. The European Society for Medical Oncology has published guidelines for the management of pain related to cancer.<sup>13</sup> The Oncology Nursing Society has also developed a position paper on cancer pain management,<sup>14</sup> and it has reviewed the evidence regarding various approaches to pain management in one of its *Putting Evidence Into Practice* publications.<sup>15</sup> These resources recommend the development of a pain management plan during the first meeting with the patient and ongoing assessments during the full trajectory of the disease.<sup>14,15</sup> Clinicians should consider 3 specific areas when they evaluate the effectiveness of a pain management plan: (1) the effectiveness of the analgesic regimen; (2) the safety and tolerability of the analgesic regimen; and (3) the impact of the plan on the patient's need and ability to function.<sup>15</sup> ONNs need to establish pain management goals with their patients and use broader outcomes than simply pain intensity. The interventions should not only provide pain relief but also address the patient's physical functioning, emotional functioning, self-ratings of

global improvement, and satisfaction with treatment and side effect management.<sup>15</sup>

### Conclusion

The care of patients with cancer requires a multidisciplinary approach that addresses the treatment of the disease itself and the management of complications such as myelosuppression and pain. Unfortunately, poor communication between healthcare providers or a lack of resources for patients may lead to suboptimal outcomes.<sup>16</sup> ONNs are instrumental in promoting high-quality and efficient care by educating patients, locating and providing necessary resources, and facilitating more effective communication among the cancer care team. ✨

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