

LYMPHOMAS

Malignant lymphomas are cancers of the lymphoid system and include distinct entities defined by clinical, histologic, immunologic, molecular, and genetic characteristics. Based on histologic characteristics, lymphomas are divided into two major subgroups: Hodgkin's disease and non-Hodgkin's lymphoma.

HODGKIN'S DISEASE

The etiology of *Hodgkin's disease* is unclear, but indirect evidence indicates a viral cause. Signs and symptoms of Hodgkin's disease are distinctive—patients present with a slow, insidious, superficial lymphadenopathy with lymph (cervical, supraclavicular, mediastinal) nodes that are firm, rubbery, and freely movable. The disease spreads in a generally predictable manner to contiguous lymph nodes via lymphatic channels.

Because of many histologic subtypes and ongoing biological, pathological, and clinical studies, classifying lymphomas is controversial. In 1999, the World Health Organization suggested a change in the subtyping of Hodgkin's disease that would assist physicians in selecting treatment protocols.

Treatment for Hodgkin's disease may include radiation, a combination of radiation and chemotherapy, or chemotherapy alone. The cure rate for newly diagnosed cases is higher than 90%, making Hodgkin's disease one of the most treatable forms of cancer. Bone marrow transplant or peripheral progenitor (stem) cell transplants with high-dose chemotherapy are recommended for patients who have relapsed/failed primary chemotherapy regimen.

NON-HODGKIN'S LYMPHOMA

Non-Hodgkin's lymphoma is a malignancy of the B lymphocyte and T lymphocyte cell systems. Abnormal lymphocytes accumulate and form masses in lymph tissue such as the lymph nodes, spleen, or other organs. Malignant lymphocytes travel through the circulation to distant sites. Common extranodal sites include the lungs, liver, gastrointestinal tract, meninges, skin, and bones. Most patients with non-Hodgkin's lymphoma fall into two broad categories related to their clinical features: the nodular indolent type, and the diffuse, aggressive lymphomas. Malignant lymphocytes accumulate in lymph nodes. If the normal follicular structure of the nodes remains intact, the lymphoma is called follicular or nodular. When malignant cells destroy the follicles, the lymphoma is considered diffuse. For treatment purposes, they may be separated into two categories: low-grade lymphoma and aggressive lymphoma (which includes intermediate-grade and high-grade lymphomas). Treatment for non-Hodgkin's lymphomas may include watching and waiting, radiation, chemotherapy (usually multiple combinations of antineoplastic agents), monoclonal antibodies (rituximab [Rituxan]), peripheral progenitor (stem) cell transplant or bone marrow transplant. With or without treatment, low-grade lymphomas can transform into a more aggressive lymphoma, or the tumor replaces the hematopoietic and lymphoid tissue, which leads to multiple systemic dysfunction and death. Intermediate- and high-grade lymphomas tend to be more responsive to treatment.

CARE SETTING

Acute inpatient care on a medical unit for initial evaluation and treatment, then at community level. This plan of care addresses potential complications that may be encountered in acute care or hospice settings. (The nurse is referred to other related cancer care plans for nursing interventions related to treatments such as radiation, chemotherapy, and bone marrow transplant.)

RELATED CONCERNS

Anemias (iron deficiency, pernicious, aplastic, hemolytic)

Cancer

Leukemias

Psychosocial aspects of care

Sepsis/septicemia

Spinal cord injury (acute rehabilitative phase) (complication related to spinal cord involvement/compression)

Transplantation (postoperative and lifelong)

Upper gastrointestinal/esophageal bleeding

Patient Assessment Database

ACTIVITY/REST

May report: Fatigue, weakness, or general malaise

Loss of productivity and decreased exercise tolerance
Excessive sleepiness

May exhibit: Diminished strength, slumping of the shoulders, slow walk, and other cues indicative of fatigue
Night sweats

CIRCULATION

May report: Palpitations, angina/chest pain

May exhibit: Tachycardia, dysrhythmias
Cyanosis and edema of the face and neck or right arm (superior vena cava syndrome—obstruction of venous drainage from enlarged lymph nodes is a rare occurrence)
Scleral icterus and a generalized jaundice related to liver damage and consequent obstruction of bile ducts by enlarged lymph nodes (may be a late sign)
Pallor (anemia), diaphoresis, night sweats

EGO INTEGRITY

May report: Increased stress, e.g., school, job, family
Fear related to diagnosis and possibility of dying
Concerns about diagnostic testing and treatment modalities (chemotherapy and radiation therapy)
Financial concerns: Hospital costs, treatment expenses, fear of losing job-related benefits because of lost time from work
Relationship status: Fear and anxiety related to being a burden on the family

May exhibit: Varied behaviors, e.g., angry, withdrawn, passive

ELIMINATION

May report: Changes in characteristics of urine and/or stool, vague abdominal pain
History of intestinal obstruction, e.g., intussusception or malabsorption syndrome (infiltration from retroperitoneal lymph nodes)

May exhibit: Abdomen: RUQ tenderness and enlargement on palpation (hepatomegaly); LUQ tenderness and enlargement on palpation (splenomegaly)
Decreased output, dark/concentrated urine, anuria (ureteral obstruction/renal failure)
Bowel and bladder dysfunction (spinal cord compression occurs late)

FOOD/FLUID

May report: Anorexia/loss of appetite
Dysphagia (pressure on the esophagus)
Recent unexplained weight loss equivalent to 10% or more of body weight in previous 6 mo with no attempt at dieting

May exhibit: Edema of the lower extremities (inferior vena cava obstruction from intra-abdominal lymph node enlargement associated with non-Hodgkin's lymphoma)
Ascites (inferior vena cava obstruction related to intra-abdominal lymph node enlargement)

NEUROSENSORY

May report: Nerve pain (neuralgias) reflecting compression of nerve roots by enlarged lymph nodes in the brachial, lumbar, and sacral plexuses
Muscle weakness, paresthesia

May exhibit: Mental status: Lethargy, withdrawal, general lack of interest in surroundings
Paraplegia (tumor involvement/spinal cord compression from collapse of vertebral body, disc involvement with compression/degeneration, or compromised blood supply to the spinal cord)

PAIN/DISCOMFORT

May report: Tenderness/pain over involved lymph nodes, e.g., in or around the mediastinum; chest pain, back pain (vertebral compression); stiff neck; generalized bone pain (lymphomatous bone involvement)

May exhibit: Immediate pain in involved areas following ingestion of alcohol (Hodgkin's disease)
Self-focusing; guarding behaviors

RESPIRATION

May report: Dyspnea on exertion or at rest; chest pain

May exhibit: Dyspnea; tachypnea
Dry, nonproductive cough (hilar lymphadenopathy)
Signs of respiratory distress, e.g., increased respiratory rate and depth, use of accessory muscles, stridor, cyanosis
Hoarseness/laryngeal paralysis (pressure from enlarged nodes on the laryngeal nerve)

SAFETY

May report: History of frequent/recurrent infections (abnormalities in cellular immunity predispose patient to systemic herpes virus infections, TB, toxoplasmosis, or bacterial infections), mononucleosis (higher risk of Hodgkin's disease in patient with high titers of Epstein-Barr virus), HIV (risk of non-Hodgkin's lymphoma is 60–100 times higher in these patients compared with the general population)
Administration of immunosuppressive drugs after organ transplantation
History/presence of ulcers/perforation, gastric bleeding
Waxing and waning pattern of lymph node size
Cyclical pattern of evening temperature elevations lasting a few days to weeks (Pel-Ebstein fever) followed by alternate afebrile periods; drenching night sweats without chills

May exhibit: Unexplained, persistent fever higher than 100.4°F (38°C) without symptoms of infection
Asymmetrical, painless, yet swollen/enlarged lymph nodes (cervical nodes most commonly involved, left side more than right; then axillary and mediastinal nodes)
Nodes may feel rubbery and hard, discrete and movable
Tonsillar enlargement
Generalized pruritus/urticaria (Hodgkin's disease)
Patchy areas of loss of melanin pigmentation (vitiligo)

SEXUALITY

May report: Concern about fertility/pregnancy (although disease does not affect either, treatment does)
Decreased libido

TEACHING/LEARNING

May report: Familial risk factors (higher incidence among families of Hodgkin's patients than in general population)
Occupational exposure to pesticides and herbicides or other chemicals, e.g. benzene, creosote, lead, formaldehyde, paint thinner

Discharge plan **DRG projected mean length of inpatient stay: 7.4 days; with surgical intervention: 9.2 days**

considerations: May need assistance with medical therapies/supplies, self-care activities and/or homemaker/maintenance tasks, transportation, shopping
Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

These diseases are staged according to the microscopic appearance of involved lymph nodes and the extent and severity of the disorder. Accurate staging is most important in deciding subsequent treatment regimens and prognosis.

Blood studies may vary from completely normal to marked abnormalities. In stage I, few patients have abnormal blood findings.

CBC:

WBC: Variable, may be normal, decreased, or markedly elevated.

Differential WBC: Neutrophilia, monocytosis, basophilia, and eosinophilia may be found. Complete lymphopenia (late symptom).

RBC and Hb/Hct: Decreased.

Erythrocytes: Stained RBC examination: May demonstrate mild to moderate normocytic, normochromic anemia (hypersplenism).

Platelets: Decreased or may be elevated.

ESR: Elevated during active stages and indicates inflammatory or malignant disease. Useful to monitor patients in remission and to detect early evidence of recurrence of disease.

Erythrocyte osmotic fragility: Increased.

Coombs' test: Positive reaction (hemolytic anemia) may occur; however, a negative result usually occurs in advanced disease.

C-reactive protein (CRP) serum titer: May be positive in patients with Hodgkin's disease.

Serum cryoglobulins: May be positive in patients with Hodgkin's disease.

Serum haptoglobin: May be elevated in patients with Hodgkin's disease and in those with cancer of the lung, large intestine, stomach, breast, and liver.

Serum iron and TIBC: Decreased.

Serum alkaline phosphatase: Elevation may indicate either liver or bone involvement.

Serum LDH: Elevated.

Serum copper: Elevation may be seen in exacerbations.

Serum calcium: May be elevated when bone is involved.

Serum uric acid: Elevation related to increased destruction of nucleoproteins and liver and kidney involvement.

BUN: May be elevated when kidney involvement is present.

Serum creatinine, bilirubin, antistreptolysin (ASL); creatinine clearance: May be done to detect organ involvement.

Gamma globulin: Hypergammaglobulinemia is common; may occur in advanced disease.

Chest x-ray: May reveal mediastinal or hilar adenopathy, nodular infiltrates, or pleural effusions.

X-rays of thoracic, lumbar vertebrae, proximal extremities, pelvis, or areas of bone tenderness: Determine areas of involvement and assist in staging.

IVP: May be done to detect renal involvement or ureteral deviation by involved nodes.

Whole lung tomography or chest computed tomography (CT) scan: Done if hilar adenopathy is present to reveal possible involvement of mediastinal lymph nodes.

Abdominal and pelvic CT scan: May be done to rule out diseased nodes in the abdomen and pelvis and associated organs.

Abdominal ultrasound: Evaluates extent of involvement of retroperitoneal lymph nodes.

Bone scans: Done to detect bone involvement.

Gallium scan: Proven useful for detecting recurrent nodal disease, especially above the diaphragm.

Lymphangiogram: Historically a very important diagnostic tool. Seldom done today because of newer technologies.

Bone marrow biopsy: Determines bone marrow involvement, which is seen in advanced stages.

Lymph node biopsy: Establishes the diagnosis of Hodgkin's disease based on the presence of the Reed-Sternberg cell.

Mediastinoscopy: May be performed to establish diagnosis (presence of lymphoma in mediastinal lymph nodes).

Staging laparoscopy or laparotomy: May be done to obtain specimens of retroperitoneal nodes, of both lobes of the liver, and/or to remove the spleen. (Splnectomy is controversial because it may increase the risk of infection and is currently not usually done unless patient has clinical manifestations of stage IV disease.)

NURSING PRIORITIES

1. Provide physical and psychological support during extensive diagnostic testing and treatment regimen.
2. Prevent complications.
3. Alleviate pain.
4. Provide information about disease process/prognosis and treatment needs.

DISCHARGE GOALS

1. Complications prevented/minimized.
2. Dealing with individual situation realistically.
3. Pain relieved/controlled.
4. Disease process/prognosis, possible complications, and therapeutic regimen understood.
5. Plan in place to meet needs after discharge.

Refer to CPs: Cancer, Leukemias, for general nursing diagnoses and interventions to accomplish corresponding nursing priorities/discharge goals.

NURSING DIAGNOSIS: Sexual Dysfunction

May be related to

Altered body structure or function (drugs, surgery, disease process, radiation [loss of sexual desire, disruption of sexual response pattern])

Possibly evidenced by

Verbalization of problem
Actual or perceived limitation imposed by disease and/or therapy
Alteration in relationship with SO

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Sexual Functioning (NOC)

Verbalize understanding of individual reasons for sexual problems.
Identify stressors in lifestyle that may contribute to the dysfunction.
Discuss concerns about body image, sex role, desirability as a sexual partner with partner/SO.

ACTIONS/INTERVENTIONS	RATIONALE
Sexual Counseling (NIC)	
Independent	
Have patient describe problem in own words.	Provides more accurate picture of patient experience with which to develop plan of care.
Determine importance of sex to individual/partner and patient's motivation for change.	Because lymphomas often affect the relatively young who are in their productive years, these people may be affected more by these problems and may be less knowledgeable about the possibilities of change.
Assess knowledge of patient/SO regarding sexual function and effects of current situation/condition.	Helps identify areas of concern, misconception, and actual problems related to therapy side effects.
Identify preexisting and current stress factors that may be affecting the relationship.	Patient may be concerned about other issues, such as job, financial, and illness-related problems.
Determine specific pathophysiology, illness/surgery/trauma involved and impact on (perception of) individual.	Patient's perception of the individual effects of this illness is crucial to planning interventions that will be appropriate to those affected (patient and family).
Assist with treatment of underlying condition.	As illness is treated and patient can see improvement, hope is restored and patient can begin to look to the future.
Provide factual information.	Promotes trust in caregivers.
Encourage and accept expressions of concern, anger, grief, fear.	Helps patient identify feelings and begin to deal with them.
Encourage patient to share thoughts/concerns with partner and to clarify values/impact of condition on relationship.	Helps couple begin to deal with issues that can strengthen or weaken relationship.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Sexual Counseling (NIC)</p> <p>Collaborative</p> <p>Refer to appropriate community resources/support groups, e.g., CanSurmount.</p> <p>Provide written material/bibliotherapy Internet sites, other resources appropriate to age/situation.</p> <p>Refer to psychiatric clinical nurse specialist/professional sexual therapist as indicated.</p>	<p>Provides information about resources that are available to help with individual needs. Meeting with others who are dealing with the effects of devastating illness can help patient/family.</p> <p>Reinforces information patient has received.</p> <p>May need additional in-depth assistance to resolve existing problems.</p>

<p>NURSING DIAGNOSIS: Breathing Pattern/Airway Clearance, risk for ineffective</p> <p>Risk factors may include</p> <p>Tracheobronchial obstruction: enlarged mediastinal nodes and/or airway edema (Hodgkin's and non-Hodgkin's); superior vena cava syndrome (non-Hodgkin's)</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Respiratory Status: Ventilation (NOC)</p> <p>Maintain a normal/effective respiratory pattern, free of dyspnea, cyanosis, or other signs of respiratory distress.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Ventilation Assistance (NIC)</p> <p>Independent</p> <p>Assess/monitor respiratory rate, depth, rhythm. Note reports of dyspnea and/or use of accessory muscles, nasal flaring, altered chest excursion.</p> <p>Place patient in position of comfort, usually with head of bed elevated or sitting upright leaning forward (weight supported on arms), feet dangling.</p> <p>Reposition and assist with turning periodically.</p> <p>Instruct in/assist with deep-breathing techniques and/or pursed-lip or abdominal diaphragmatic breathing if indicated.</p>	<p>Changes (such as tachypnea, dyspnea, use of accessory muscles) may indicate progression of respiratory involvement/compromise requiring prompt intervention.</p> <p>Maximizes lung expansion, decreases work of breathing, and reduces risk of aspiration.</p> <p>Promotes aeration of all lung segments and mobilizes secretions.</p> <p>Helps promote gas diffusion and expansion of small airways. Provides patient with some control over respiration, helping to reduce anxiety.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Ventilation Assistance (NIC)</p> <p>Independent</p> <p>Monitor/evaluate skin color, noting pallor, development of cyanosis (particularly in nailbeds, ear lobes, and lips).</p> <p>Assess respiratory response to activity. Note reports of dyspnea/"air hunger," increased fatigue. Schedule rest periods between activities.</p> <p>Identify/encourage energy-saving techniques, e.g., rest periods before and after meals, use of shower chair, sitting for care.</p> <p>Promote bedrest and provide care as indicated during acute/prolonged exacerbation.</p> <p>Encourage expression of feelings. Acknowledge reality of situation and normality of feelings.</p> <p>Provide calm, quiet environment.</p> <p>Observe for neck vein distension, headache, dizziness, periorbital/facial edema, dyspnea, and stridor.</p> <p>Provide support to family/caregivers. Encourage open expression of feelings.</p>	<p>Proliferation of WBCs can reduce oxygen-carrying capacity of the blood, leading to hypoxemia.</p> <p>Decreased cellular oxygenation reduces activity tolerance. Rest reduces oxygen demands and minimizes fatigue and dyspnea.</p> <p>Aids in reducing fatigue and dyspnea, and conserves energy for cellular regeneration and respiratory function.</p> <p>Worsening respiratory involvement/hypoxia may necessitate cessation of activity to prevent more serious respiratory compromise.</p> <p>Anxiety increases oxygen demand, and hypoxemia potentiates respiratory distress/cardiac symptoms, which in turn escalates anxiety.</p> <p>Promotes relaxation, conserving energy and reducing oxygen demand.</p> <p>Non-Hodgkin's patients are at risk for superior vena cava syndrome, which may result in tracheal deviation and airway obstruction, representing an oncologic emergency.</p> <p>Development of this complication is very frightening for patient and family because it may indicate end-stage of disease process/approaching death, especially in the hospice setting. Keeping family informed may diminish their anxiety and minimize transmission to patient.</p>
<p>Collaborative</p> <p>Provide supplemental oxygen.</p> <p>Monitor laboratory studies, e.g., ABGs, oximetry.</p> <p>Administer analgesics and tranquilizers as indicated.</p> <p>Assist with respiratory treatments/adjuncts, e.g., IPPB, incentive spirometer, if appropriate.</p> <p>Assist with intubation and mechanical ventilation.</p>	<p>Maximizes oxygen available for circulatory uptake; aids in reducing hypoxemia.</p> <p>Measures adequacy of respiratory function and effectiveness of therapy.</p> <p>Reducing physiological responses to pain/anxiety decreases oxygen demands and may limit respiratory compromise.</p> <p>Promotes maximal aeration of all lung segments, preventing atelectasis.</p> <p>May be necessary to support respiratory function until airway edema is resolved in acutely ill hospitalized patient.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Ventilation Assistance (NIC)</p> <p>Independent</p> <p>Prepare for emergency radiation therapy when indicated.</p>	<p>Treatment of choice for superior vena cava syndrome.</p>

<p>NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding disease process, prognosis, treatment regimen, self-care, and discharge needs</p> <p>May be related to</p> <ul style="list-style-type: none"> Lack of exposure/recall Information misinterpretation Unfamiliarity with information resources Cognitive limitations <p>Possibly evidenced by</p> <ul style="list-style-type: none"> Request for information, verbalization of problem, statements reflecting misconceptions Inaccurate follow-through of instruction, development of preventable complications <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Knowledge: Illness Care (NOC)</p> <ul style="list-style-type: none"> Verbalize understanding of condition, prognosis, and potential complications. Identify relationship of signs/symptoms to disease process. Initiate necessary lifestyle changes.
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Discuss potential complications relative to specific therapeutic regimen.</p> <p>Emphasize need for ongoing medical follow-up.</p> <p>Identify signs/symptoms requiring further evaluation, e.g., cough, fever, chills, malaise, dyspnea (pneumonitis); weight gain, slow pulse, decreased energy level, intolerance to cold (hypothyroidism); moderate fever, chest pain, dry cough, dyspnea, rapid pulse (pericarditis); dyspnea, fatigue, chest pain, dizziness/syncope (cardiomyopathy).</p>	<p>Possible side effects/long-term physical complications of radiation (direct or indirect) and some chemotherapy agents include pneumonitis, hypothyroidism, pericarditis, cardiomyopathy.</p> <p>Following treatment, there is increased risk of secondary malignancies (e.g., thyroid, myeloid leukemia, non-Hodgkin's lymphoma) in addition to other complications listed. <i>Note:</i> Yearly Pap smears are recommended for female patients because Hodgkin's cells may be found on the cervix.</p> <p>Prompt intervention can limit progression of complication, reduce debilitating effects.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Recommend regular exercise in moderation, with adequate rest. Discuss energy conservation techniques.</p> <p>Review infection prevention measures and signs/symptoms requiring further evaluation.</p> <p>Determine financial needs/concerns. Identify community resources, vocational services.</p>	<p>Promotes general well-being. <i>Note:</i> Fatigue is associated with disease process and treatment regimen, as well as developing complications. Therefore, balancing activity with rest enhances patient's ability to perform ADLs.</p> <p>Condition is associated with a complex deficiency in cellular immunity both before and after therapy. <i>Note:</i> Herpes zoster is a common occurrence.</p> <p>Although survival rates are relatively good, patients often have limitations in physical activities/employment because of dyspnea, chronic fatigue, and difficulties in concentration or memory. Presence of the disease can also impact patient's ability to work or qualify for bank loans or obtain insurance.</p>

POTENTIAL CONSIDERATIONS following acute hospitalization (dependent on patient's age, physical condition/presence of complications, personal resources, and life responsibilities)

Fatigue—decreased metabolic energy production, overwhelming psychological or emotional demands, states of discomfort, altered body chemistry, e.g., chemotherapy.

Family Processes, interrupted—situational crisis (illness, disabling/expensive treatments).