- Use isolation procedures when indicated, usually when the neutrophil count is below 500/mm^3.
- Promote adequate nutrition, with nutritious fluids, supplements, and snacks when indicated.
- Promote adequate rest, sleep, and exercise (eg, schedule frequent rest periods, avoid interrupting sleep when possible, individualize exercise or activity according to the client's condition).
- Inform clients about diagnostic test results, planned changes in therapeutic regimens, and evidence of progress.
- Allow family members or significant others to visit clients when feasible.
- Monitor complete blood count (CBC) and other diagnostic test reports for normal or abnormal values.
- Schedule and coordinate drug administration, diagnostic tests, and other elements of care to conserve clients' energy and decrease stress.
- Consult other health care providers (eg, physician, dietitian, social worker) on the client's behalf when indicated.
- Assist clients to learn ways to prevent or reduce the incidence of infections (eg, meticulous personal hygiene, avoiding contact with infected people).
- Assist clients to learn ways to enhance immune mechanisms and other body defenses by healthy lifestyle habits, such as a nutritious diet, adequate rest and sleep, and avoidance of tobacco and alcohol.
- Assist clients or caregivers in learning how to prepare and inject darbepoetin alfa, epoetin alfa, filgrastim, an interferon, or oprelvekin, when indicated.

Evaluation

- Determine the number and type of infections that have occurred in neutropenic clients.
- Compare current CBC reports with baseline values for changes toward normal levels (eg, WBC count 5000 to 10,000/mm^3).
- Compare weight and nutritional status with baseline values for maintenance or improvement.
- Observe and interview for decreased numbers or severity of disease symptoms.
- Observe for increased energy and ability to participate in ADLs.
- Observe and interview outpatients regarding compliance with follow-up care.
- Observe and interview regarding the mental and emotional status of the client and family members.

PRINCIPLES OF THERAPY

Inpatient Versus Outpatient Settings for Drug Administration

Choosing inpatient or outpatient administration of hematopoietic and immunostimulant therapy depends on many factors, including the condition of the client, route of drug administration, expected duration of therapy, and potential severity of adverse drug reactions. Most of these drugs are proteins, and anaphylactic or other allergic reactions may occur, especially with parenteral administration. Thus, initial doses should be given where appropriate supplies and personnel are available to treat allergic reactions.

Darbepoetin alfa, epoetin alfa, filgrastim, interferons, and oprelvekin may be taken at home if the client or a caregiver can prepare and inject the medication. Because severe, life-threatening adverse effects may occur with high-dose aldesleukin, this drug should be given only in a hospital with intensive care facilities, under the supervision of health care providers experienced in critical care.

Dosage

With darbepoetin alfa and epoetin alfa, dosage is adjusted according to response. With darbepoetin, dosage is adjusted to achieve and maintain a hemoglobin value of approximately 12 g/dL. With epoetin, dosage is adjusted to achieve and maintain a hematocrit value of 30% to 36%. Dosage should be reduced when the hematocrit approaches 36% or increases >4 points in any 2-week period. Dosage should be increased if hematocrit does not increase by 5 to 6 points after 8 weeks of drug therapy and is below the recommended range. When doses are changed, measurable differences in hematocrit do not occur for 2 to 6 weeks because of the time required for maturation of RBCs and their release into the circulation. Thus, the hematocrit should be checked twice weekly for at least 2 to 6 weeks after any dosage change. In general, dose adjustments should not be made more often than once monthly.

Optimal dosages for interferons and aldesleukin have not been established. For clients who experience severe adverse reactions with interferon alfa, dosage should be reduced by 50% or administration stopped until the reaction subsides. For clients who experience severe reactions to aldesleukin, dosage reduction is not recommended. Instead, one or more doses should be withheld, or the drug should be discontinued. Withhold the dose for cardiac arrhythmias, hypotension, chest pain, agitation or confusion, sepsis, renal impairment (oliguria, increased serum creatinine), hepatic impairment (encephalopathy, increasing ascites), positive stool guaiac test, or severe dermatitis, until the condition is resolved. The drug should be discontinued for the occurrence of any of the conditions listed as contraindications for repeat courses of aldesleukin therapy (eg, sustained ventricular tachycardia, angina, myocardial infarction, pulmonary intubation, renal dialysis, coma, and GI bleeding).

Laboratory Monitoring

With darbepoetin and epoetin, iron stores (eg, transferrin saturation and serum ferritin) should be measured before and periodically during treatment. Virtually all patients eventually require supplemental iron. Check hemoglobin