

[Nursing Care Management](#) section, including psychological and physical preparation for diagnostic and operative procedures; prevention of postoperative complications for abdominal, thoracic, or cranial surgery; and explanation of chemotherapy and radiotherapy and their side effects (see [Tables 25-1](#) and [25-3](#)).

TABLE 25-3

Late Effects of Cancer Treatment

Systemic Effects and Clinical Manifestations	Associated Mode of Treatment
Central Nervous System	
Leukoencephalopathy (syndrome ranging from lethargy, dementia, and seizures to quadriplegia and death)	Methotrexate, intrathecal chemotherapy, or CNS irradiation
Mineralizing microangiopathy (headaches, focal seizures, incoordination, gait abnormalities)	Methotrexate or CNS irradiation
Peripheral neuropathy (footdrop, tingling sensation in hands and/or feet, incoordination)	Vincristine
Cognitive deficits (decline with intelligence, memory, attention, nonlanguage skills)	Intrathecal chemotherapy or cranial irradiation (especially before 3 years old)
Cardiovascular	
Cardiomyopathy (tachycardia, tachypnea, dyspnea, shortness of breath, edema, palpitations)	Anthracyclines (doxorubicin and daunorubicin) or irradiation to heart High-dose cyclophosphamide
Pericardial damage (pleural effusion, cardiomegaly)	Mediastinal irradiation
Respiratory	
Pneumonitis (dyspnea, nonproductive cough, fever) Pulmonary fibrosis (dyspnea, restrictive ventilation, decreased exercise tolerance)	Lung irradiation, alkylating agents, possibly bleomycin, vinblastine, cisplatin
Gastrointestinal	
Chronic enteritis (colic, abdominal pain, vomiting, diarrhea, obstipation, bleeding)	Abdominal irradiation, methotrexate, cytosine arabinoside
Hepatic fibrosis (jaundice, hepatomegaly)	Methotrexate, 6-mercaptopurine
Urinary	
Hemorrhagic cystitis (microscopic hematuria to gross hemorrhage)	Cyclophosphamide; ifosfamide; irradiation
Bladder fibrosis (decreased bladder capacity, ureteral reflux) Tubular necrosis (decreased creatinine clearance)	Cisplatin
Endocrine	
Thyroid dysfunction (see Chapter 28)	Irradiation to thyroid, pituitary gland, testes, ovaries
Reproductive	
Possible gonadal damage, both sexes (delayed puberty,	Alkylating agents