antiretroviral therapy, however, acute flare-ups of CMV retinitis may occur secondary to an immune reconstitution inflammatory syndrome.

Syndromes produced by CMV in immunocompromised hosts ("CMV syndrome") often begin with fatigue, fever, malaise, anorexia, night sweats, and arthralgias or myalgias. Liver function abnormalities, leukopenia, thrombocytopenia, and atypical lymphocytosis may be observed during these episodes. Without treatment, CMV infection may progress to more severe end-organ disease. The development of tachypnea, hypoxemia, and nonproductive cough signals respiratory involvement. Radiologic examination of the lung often shows bilateral interstitial or reticulonodular infiltrates that begin in the periphery of the lower lobes and spread centrally and superiorly; localized segmental, nodular, or alveolar patterns are less common. The differential diagnosis includes *Pneumocystis* infection; other viral, bacterial, or fungal infections; pulmonary hemorrhage; and injury secondary to irradiation or to treatment with cytotoxic drugs.

Gastrointestinal CMV involvement may be localized or extensive and almost exclusively affects immunocompromised hosts. Colitis is the most common clinical manifestation in organ transplant recipients. Ulcers of the esophagus, stomach, small intestine, or colon may result in bleeding or perforation. Clinicians should be aware that blood tests such as CMV antigenemia and viral load testing may yield negative results in the setting of intestinal disease. CMV infection may lead to exacerbations of underlying ulcerative colitis. Hepatitis occurs frequently, particularly after liver transplantation. Acalculous cholecystitis and adrenalitis also have been described.

CMV rarely causes meningoencephalitis in otherwise healthy individuals. Two forms of CMV encephalitis are seen in people with HIV. One resembles HIV encephalitis and presents as progressive dementia; the other is a ventriculoencephalitis characterized by cranial-nerve deficits, nystagmus, disorientation, lethargy, and ventriculomegaly. In immunocompromised patients, CMV can also cause subacute progressive polyradiculopathy, which is often reversible if recognized and treated promptly.