Persistent Fever and Cough With Nonspecific Lower Lung Lobe Consolidation

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R.J. is a 34-year-old female with non-Hodgkin’s lymphoma who completed her third course of cyclophosphamide, doxorubicin, vincristine, and prednisone 13 days ago. She presents to the inpatient unit with a fever of 101.4°F, blood pressure of 92/54 mm/Hg, apical pulse of 104 beats per minute, respiratory rate of 24 breaths per minute, and arterial blood oxygen saturation of 96% on room air. Physical examination is within normal limits. No adventitious sounds are noted on chest auscultation; however, she does have a nonproductive cough. In addition to blood and urine cultures, a complete blood count with differential, serum electrolytes, liver enzymes, and urinalysis are within normal limits.

After four days of therapy, R.J. continues to have temperature spikes above 100.5°F. Blood cultures show no growth after 72 hours. Amphotericin B and acyclovir are added to the treatment schedule. A follow-up chest x-ray returns to baseline after two weeks of treatment (see Figure 2).

Pathophysiology

Pneumocystis carinii is a fungal infection that is present naturally in the environment. Infection with multiple strains has been noted in 20%–30% of patients with PCP (Agostoni et al., 2000; Beard et al., 2000; Kovacs et al.). The route of transmission of P. carinii in humans is unknown, although airborne transmission (i.e., person to person or environment to person) is suspected (Armstrong & Bernard, 2000; Kovacs et al., 2001). The underlying pathophysiology of P. carinii also is unknown. The organism possibly attaches to areas on alveolar macrophages, and in binding to type I alveolar epithelial cells, the basement membrane degenerates and normal surfactant function is impaired. An eosinophilic, foamy exudate develops that fills the alveolar space and leads to impaired gas exchange. Although rare, bullous cavities may develop, usually in the

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Key Words: pneumonia, pneumocystis carinii; HIV; anti-infective agents

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FIGURE 1. DIFFUSE BILATERAL AIRSPACE INFILTRATES

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