Chapter 5. MAC Infection Prophylaxis

Background

Mycobacterium avium complex (MAC) is a slow-growing bacterium that is an important cause of disseminated infection in patients with advanced HIV disease. The risk of developing MAC infection becomes significant when the patient's CD4 cell count falls to about 50/mm^3 and increases progressively as it further declines. Prophylactic antimicrobial therapy has been shown to be effective in preventing MAC infection, with the risk reduced by one-half in most studies.

MAC infection presents subacutely with nonspecific symptoms, including fever, fatigue, weight loss, and diarrhea. Physical examination may show few, if any, abnormalities. Diagnosis is generally made by isolator blood culture, although the organism can also be cultured from body tissues (e.g., bone marrow, liver). Treatment of MAC infection requires a combination of antimycobacterial drugs given for a prolonged period of time.

Guidelines

Prophylaxis is recommended in all patients with a CD4 cell count of less than 50/mm^3. Effective drugs include the macrolides azithromycin (1200 mg po weekly or 600 mg po twice per week) and clarithromycin (500 mg po bid); and rifabutin (300 mg po qd).

Azithromycin and clarithromycin are preferred to rifabutin because they are more effective. In addition, rifabutin requires dosage adjustment or is contraindicated for use with some protease inhibitors and non-nucleoside reverse transcriptase inhibitors. Both macrolides have the advantage of conferring protection against infection with bacterial respiratory pathogens such as pneumococcus. Clarithromycin is more costly than azithromycin, and their toxicities, which are primarily gastrointestinal, appear comparable. While the combination of a macrolide with rifabutin provides additional protection against MAC infection than either agent alone, there is also a greater risk of drug toxicity.

Before MAC prophylaxis is started, clinical assessment to rule out disseminated infection is recommended. If warranted, an isolator blood culture should be obtained.

Primary prophylaxis can be safely discontinued in patients whose CD4 cell count rises above 100/mm^3 for 3 months on combination antiretroviral therapy. Secondary prophylaxis (maintenance therapy) in patients with established MAC infection can be discontinued if the CD4 cell count rises above 100/mm^3 for 6 months and they are asymptomatic and have completed 12 months of antimicrobial therapy.