Pulmonary tuberculosis has experienced a marked decrease in HIV-infected patients with the introduction of HAART.

Atypical mycobacterial infections, particularly Mycobacterium avium complex, are common in HIV-infected patients with less than 50 CD4+ cells/mm³. With the introduction of HAART, the incidence of these infections has dropped significantly. The exception of long transplant patients, atypical mycobacterial infections are rare in SOT recipients.

- Pulmonary tuberculosis in patients with AIDS has a longer median duration of symptoms and a better outcome than in patients with SOT and HSCT.

The chest radiograph can vary from normal to any type of infiltrates, although diffuse bilateral infiltrates is the most common presentation. An increase in serum lactate dehydrogenase and, particularly, the presence of pneumococci pneumonia is the most common presentation.

- A marked decrease in the incidence of P. carinii pneumonia has been observed owing to the use of P. carinii prophylaxis in patients at risk and the use of highly active antiretroviral therapy (HAART) in HIV-infected patients.

- The incidence of CMV pneumonia among SOT recipients ranges from 8% to 56% in kidney, heart, and liver transplant recipients but is considerably higher in pancreas (85%), lung, and heart-lung transplant recipients (95% to 99%).

- By contrast, introduction of HAART has resulted in a drastic decrease in the number of cases of CMV disease in HIV-infected patients. CMV antigenemia based on the detection of the pUL54 CMV antigen in peripheral blood leukocytes and quantitative PCR for early detection of viral DNA in serum have been implemented for early detection of active infection. Both assays have a sensitivity and specificity for the diagnosis of active infection of greater than 85% and diagnostic active infection 1 to 3 weeks before conventional tools.

- Occasionally, involvement of other organ systems with hepatitis, ulcerative gastroenteritis, hemorrhagic cysts, or retinopathy is a clue to the etiology of the pulmonary disease.

- Recent developments in molecular-based diagnostic tools have shown that conventional respiratory viruses (influenza, parainfluenza, respiratory syncytial virus, adenoviruses, and rhinoviruses) are frequent causes of respiratory illnesses and are associated with high rates of morbidity and mortality among immunocompromised patients.

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- As a rule, symptomatic infection will not develop before 2 to 3 weeks after transplantation, and the peak incidence occurs between 4 and 6 months after transplant. Although late symptomatic cases are well described, most infections occur in the first 4 to 6 months after transplantation.

- Pandemic: the key cells in the defense against Aspergillus, the neutropenic patient (e.g., HSCT patient) is at a high risk for dissemination.

- Invasive pulmonary aspergillosis is often fatal in prolonged severe neutropenia, is usually rapidly progressive, and requires systemic antifungal treatment. Use: voriconazole 2 mg/kg orally, twice daily for at least 7 days, followed by 4 mg/kg up to 200 mg orally, 12-hourly.

- The early use of fiberoptic bronchoscopy may add to the prompt identification of the specific etiologic agent, facilitating an etiologic-diagnostic approach.

- The use of fiberoptic bronchoscopy in immunocompromised patients provides a specific diagnostic in 50% to 80% of the cases.

- Candida species colonize the respiratory tract and are often recovered from pulmonary infiltrates in immunocompromised patients, but they are only considered as truly pathogenic if fungemia occurs or lung tissue invasion can be demonstrated.

- Cryptococcosis in a recently introduced drug with activity against both Candida and Aspergillus. It is recommended for salvage treatment.

- Cryptococcosis may cause primary community-acquired pneumonia with single or multiple nodules in the normal host and in patients with defects in cellular immunity. The serum cryptococcal antigen is usually positive and the organism can sometimes be cultured from respiratory tract specimens. Use: amphotericin B deoxycholate 1 mg/kg daily (st dosage to be adjusted according to tolerance).

- Pneumocystis carinii pneumonia is a common opportunistic infection in HIV-infected patients and in transplant recipients, particularly heart and lung transplant recipients. It is the most common cause of respiratory tract infection in HIV-infected patients and in transplant recipients, because it very often affects pulmonary infiltrates when a chest radiograph is normal.

- The number of immunocompromised patients has increased over the past decade.

- A number of studies have shown that chlamydia pneumoniae is a common and important cause of respiratory tract infection in HIV-infected patients and in transplant recipients, particularly heart and lung transplant recipients.

- Bacteria are the most frequent cause of pulmonary infections in the different groups of immunocompromised patients.

- The diagnostic approach includes a BAL and a TBFA (lymphoendothelial complexes, eosinophils, and fibrin), but the diagnosis of invasive pulmonary aspergillosis is often delayed because of the presence of asymptomatic colonization.

- The use of fiberoptic bronchoscopy in immunocompromised patients provides a specific diagnostic in 50% to 80% of the cases.

- Thoracic CT scans are an important diagnostic tool in invasive pulmonary aspergillosis. The halo sign (hemorrhagic pulmonary nodule) and air crescent sign (cavitating) are early radiologic signs typical of invasive pulmonary aspergillosis.

- This technique is also suitable for detecting infected pulmonary fibronectin in leukemic transplant recipients, because it very often detects pulmonary infiltrates when a chest radiograph is normal.

- Bacteria are the most frequent cause of pulmonary infections in the different groups of immunocompromised patients.