HIV CD4+ 100

Individuals are susceptible to certain diseases depending on their CD4+ count. When HIV patients have CD4+ counts less than 100, they are defined as having AIDS, and are susceptible to candida albicans esophagitis, aspergillus fumigatus respiratory infection, cryptococcal meningitis, CMV infection, EBV-associated lymphoma, Histoplasma capsulatum and mycobacterium avium complex (MAC) infection.



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Signs and Symptoms

Aspergillus fumigatus
Asparagus
Aspergillus fumigatus is a fungus that infects HIV-positive adults with a CD4+ count below 100 cells/microL. These patients present with hemoptysis and pleuritic pain, with chest radiography often revealing lung cavitation or infiltrates.

Cryptococcus neoformans
Crippled-cock
Cryptococcus neoformans is a potentially fatal fungal infection that disseminates in AIDS-infected individuals. Cryptococcosis manifests as meningitis, and it should be noted that this infection is highly fatal, even with appropriate treatment.

Candida albicans (Esophagitis)
Canada Owl-can
These immunocompromised patients are at risk of developing candidal esophagitis. This is a fungal infection that can be seen as white plaques on endoscopy. Patients often complain of dysphagia and throat soreness. Upon biopsy, Candida appears as a yeast and has pseudohyphae.

Mycobacterium avium complex (MAC)
Mic-bacteria Avian-bird
MAC (Mycobacterium Avium Complex), also known as Mycobacterium avium-intracellulare infection (MAI), is an atypical mycobacterial infection. It presents with pulmonary involvement, similar to TB, while diarrhea and abdominal pain are associated with gastrointestinal involvement. The risk of MAC is inversely related to the patient's CD4 count, and increases significantly when the CD4 count decreases below 50 cells/microL. Other risk factors for acquisition of MAC infection include using an indoor swimming pool, consumption of raw or partially cooked fish or shellfish, bronchoscopy and treatment with granulocyte stimulating factor.

Cytomegalovirus (CMV)
Side-toe-mega-virus
HIV patients with CD4+ counts of less than 100 cells/microL (typically less than 50 cells/microL) are susceptible to inflammation of the retina caused by cytomegalovirus, or CMV. Furthermore, patients can develop encephalitis, pneumonitis, colitis, esophagitis from CMV. In contrast to esophagitis caused by herpes simplex virus, CMV esophagitis is more likely to present with a deep single ulcer, as opposed to multiple shallow ulcers.

Epstein-Barr virus (EBV) B-cell lymphoma
Einstein Bar with Lime-foam
Epstein Barr Virus (EBV) is involved in lymphomagenesis in HIV-infected patients, and is a frequent cause of death in patients with CD4+ counts below 100 cells/microL. EBV has been largely implicated in the development of B-cell lymphoproliferative disorders as Burkitt lymphoma (BL), Hodgkin disease (HD), systemic non-Hodgkin's lymphoma (NHL), primary central nervous system lymphoma (PCNSL), and nasopharyngeal carcinoma (NC).

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Toxoplasma gondii

Tux-plasma Gandhi

These immunocompromised patients are susceptible to infection by Toxoplasma gondii, and may present with brain abscesses with characteristic ring lesions appearing on on MRI.

Cryptosporidium

Crypt-keeper-spore

Cryptosporidium is a parasitic pathogen, which leads to cryptosporidiosis. Those infected complain of chronic, watery diarrhea. Additionally, there are often stomach pains or cramps, as well as low fever. Diagnosis of cryptosporidiosis is made through antigen detection, PCR or by isolating acid-fast oocysts in stool.

Bartonella henselae

Bartender hen

As the CD4+ count drops below 100 cells/microL in HIV-infected adults, they are at significantly increased risk for developing an infection by Bartonella henselae, which leads to bacillary angiomatosis. Bacillary angiomatosis is characterized by the proliferation of blood vessels, resulting in the formation of tumor-like masses in the skin and other organs.

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