

the immunosuppressed patient

common infections in patients with humoral immunodeficiency

**Humoral immune dysfunction**  
**Bacteria**  
*Streptococcus pneumoniae*  
*Haemophilus influenzae*

common organisms in patients with cellular immunodeficiency

**Protozoa** *Toxoplasma gondii*  
*Cryptosporidia*  
**Mycobacteria** *Mycobacterium tuberculosis*  
Non-tuberculous (atypical) mycobacteria  
**Bacteria** *Salmonella* spp.  
*Shigella* spp.  
*Listeria monocytogenes*  
*Pneumocystis carinii*  
**Fungi and yeasts** *Candida* spp. (mucosal infections)  
Cryptococci  
*Aspergillus* spp.  
Dermatophytes  
*Pityrosporon* spp.  
**Viruses** Herpes viruses  
Cytomegalovirus  
Varicella-zoster  
Herpes simplex  
Epstein-Barr virus  
Molluscum contagiosum virus  
JC virus (progressive multifocal leukoencephalopathy)

tests of immunocompetence

**Antibody-mediated immunity**  
Serum immunoglobulins, including IgG subclasses  
Systemic antibody responses (after vaccination if necessary)  
Polysaccharide antigens, e.g. pneumococcal  
Protein antigen, e.g. tetanus toxoid  
Blood B-cell (CD19+, CD20+) numbers  
**Cell-mediated immunity**  
Delayed-type hypersensitivity (DTH) skin test responses  
Multitest CMI method  
Mantoux method  
Blood T-cell (CD3+) and T-cell subset (CD4+ or CD8+) numbers  
**Phagocyte function**  
Blood neutrophil numbers  
Tests of oxidative killing mechanisms, e.g. NBT test  
Leukocyte expression of CR3 (a CD18 integrin)  
Neutrophil migration assays  
Bacteria or *Candida* killing assays  
**Complement system**  
Immunochemical quantitation of individual components  
Functional assays of the classical pathway (CH50) or alternative pathway (AH50)

IgG, immunoglobulin G; DTH, delayed-type hypersensitivity; CMI, cell-mediated immunity; NBT, nitroblue tetrazolium.

common infections in neutropenic patients

**Neutropenia**  
**Bacteria**  
*Escherichia coli*  
*Pseudomonas aeruginosa*  
*Klebsiella pneumoniae*  
*Acinetobacter*  
*Staphylococcus epidermidis*  
*Staphylococcus aureus*  
*Streptococci viridans* group  
**Fungal**  
*Candida*  
*Aspergillus*  
*Mucormycosis*