common infections in patients with humoral immunodeficiency

common organisms in patients with cellular immunodeficiency

common infections in neutropenic patients

tests of immunocompetence

the immunosuppressed patient

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
- Immunoochemical quantitation of individual components
- Functional assays of the classical pathway (CH50) or alternative pathway (AH50)

Protozoa
- Toxoplasma gondii
- Cryptosporidia

Mycobacteria
- Mycobacterium tuberculosis
- Non-tuberculous (atypical) mycobacteria
- 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)

Neutropenia
- Bacteria
  - Escherichia coli
  - Pseudomonas aeruginosa
  - Klebsiella pneumoniae
  - Acinetobacter
  - Staphylococcus epidermidis
  - Staphylococcus aureus
  - Streptococci viridans group

Fungal
- Candida
- Aspergillus
- Mucormycosis

Bacteria
- Streptococcus pneumoniae
- Haemophilus influenzae

Humoral immune dysfunction

Immunocompetence tests for the immunosuppressed patient