

GOALS AND OBJECTIVES INFECTIOUS DISEASE

Infectious Disease and HIV

Overview:

The Infectious Diseases Program at the University of Southern California prepares trainees for the management of problems in clinical infectious diseases as primary care practitioners. This includes the performance of an appropriate history and physical examination, use of diagnostic tests, use of antimicrobials, and therapy of common infectious disease problems. The scope of infectious disease problems are broad and range from community-acquired pneumonia, urinary tract infections, sepsis, to nosocomial infections and HIV. The program accomplishes these goals through an organized curricular approach and exposure to a broad range of clinical experiences during the three years of housestaff training.

Clinical Training and Education in Infectious Disease and HIV

The basic populations available for trainees at the LAC+USC Medical Center include inpatient and ambulatory consultations at LAC+USC Medical Center (including the AIDS Ward and the AIDS outpatient clinic). ID fellows supervise the medical residents' consultations under the direct guidance of a member of the Infectious Diseases faculty. At any given time each trainee follows 5-8 patients with the fellow under faculty guidance.

The educational program includes teaching rounds, conferences, and core lectures. A member of the faculty makes rounds on the Communicable Disease Service and the Infectious Diseases Consultation Service with the fellows and residents every day. Conferences include weekly Infectious Disease Grand Rounds and Infectious Diseases Consultation Service Conference. General information on basic aspects of clinical infectious diseases are also presented in a series of 14 core lectures covering the following: Update on antibiotics, AIDS, infections in the immunocompromised host, fungal infections and their therapy, respiratory infections, gastrointestinal infections, urinary tract infections, musculoskeletal infections, parasitic infections, new infectious diseases, immunizations, and sexually transmitted diseases.

Common Clinical Presentations:

- Abdominal or pelvic pain
- Arthritis
- Bite, animal or human
- Cellulitis
- Cervicitis, vaginal discharge
- Delirium
- Diarrhea
- Dysuria
- Facial or ear pain
- Fatigue
- Fever, including fever in the immunosuppressed patient
- Hepatitis
- Joint effusion

ORGAN AND SYSTEM COMPETENCIES IN INTERNAL MEDICINE

Clinical Training and Education in Infectious Disease and HIV (Cont'd)

Common Clinical Presentations (Cont'd):

- Limb, sacral ulcers
- Lymphadenopathy
- Meningitis
- Needlestick
- Penile discharge, genital ulcers
- Penetrating wound or foreign body
- Prevention, public health concerns (immunization, susceptibility and exposure, prophylaxis)
- Productive cough, pulmonary infiltrate
- Rash (cellulitis, erythema, petechiae, purpura, tinea)
- Red eye
- Skin abscess
- Sore throat, painful swallowing
- Vomiting
- Weight loss

Counseling Skills:

- Alternative health practices
- HIV risk assessment
- Post-diagnosis counseling
- Substance abuse

Procedure Skills:

- Incision and drainage of superficial abscesses
- Proper collection of culture specimens from throat, cervix, vagina, rectum, urethra, blood, CSF, and joints
- Saline and potassium hydroxide preparation of vaginal fluid, skin scrapings
- Tuberculin and anergy panel skin tests

Ordering and Understanding Tests:

- Acid fast stain of clinical specimens
- Aerobic and anaerobic bacterial cultures
- Antibiotic sensitivity testing and serum levels
- Biopsy of tissues
- CD4 lymphocyte counts, HIV viral load
- Cerebrospinal fluid cell count, chemistry, VDRL, cryptococcal antigen, cytology
- Computed tomography, magnetic resonance imaging of the central nervous system
- ELISA, polymerase chain reaction, and immunoblotting techniques
- Gram stain of exudates and body fluids
- Induced sputum stain for *Pneumocystis carinii*
- Microbial sensitivity testing

ORGAN AND SYSTEM COMPETENCIES IN INTERNAL MEDICINE

Clinical Training and Education in Infectious Disease and HIV (Cont'd):

- Polymerase chain reaction, ELISA and Western blot for detection of infectious diseases
- Serology for infections (e.g., Lyme disease, syphilis, etc.)
- Syphilis serology and dark-field microscopy
- Toxoplasma serology

Infectious Disease:

Clinical Conditions:

Central nervous system

- Meningitis
- Encephalitis
- Paravertebral abscess

Conjunctivitis

Endocarditis, pericarditis

Fever of unknown origin

Fungal (histoplasmosis, coccidioidomycosis)

Gastrointestinal

- Biliary tract infection
- Gastroenteritis
- Infectious diarrhea
- Viral hepatitis
- Peritonitis
- Liver, pyogenic vs amebic abscess

Genitourinary

- Cervicitis, vaginitis
- Common sexually transmitted diseases (gonorrhea, chlamydia, trichomonas, herpes simplex, syphilis)
- Pelvic inflammatory disease
- Prostatitis, epididymitis
- Urethritis
- Urinary tract infection

HIV disease (see HIV Infection)

Infection in the immunosuppressed patient

Lyme disease

ORGAN AND SYSTEM COMPETENCIES IN INTERNAL MEDICINE

Clinical Training and Education in Infectious Disease and HIV (Cont'd)

Malaria

Otitis, mastoiditis, malignant external otitis

Head and Neck

- Periorbital cellulitis
- Orbital cellulitis

Infections associated with prosthetic devices including prosthetic joints, heart valves

Nosocomial Infection

- Catheter infection
- Post-operative fever

Prevention

- Immunizations
- Post-Exposure
 - Needlestick
 - Hemophilus influenzae - type B
 - Neisseria meningitidis
 - Bite, animal or human
 - Hepatitis B
 - Diphtheria
 - Tuberculosis
- Pre-operative antibiotics
- Travel

Respiratory

- Acute epiglottitis, pharyngitis
- Pneumonia (community and nosocomial), bronchitis
- Sinusitis
- Upper respiratory tract infection
- Empyema

Rheumatologic/musculoskeletal

- Osteomyelitis
- Septic arthritis

Sepsis, septic shock syndrome

Skin infections

- Cellulitis, necrotizing fasciitis, septic thrombophlebitis
- Ulcers

Chronic fatigue syndrome

ORGAN AND SYSTEM COMPETENCIES IN INTERNAL MEDICINE

Clinical Training and Education in Infectious Disease and HIV (Cont'd):

Antimicrobial resistance

- VRE
- Streptococcus pneumoniae
- Nosocomial gram negative rods
- Mycobacterium tuberculosis

Outbreak - epidemiology

Tuberculosis

- Active infection
- Positive tuberculin skin test

Viral

- Herpes simplex infection
- Influenza
- Mononucleosis
- Varicella zoster infection
- Cytomegalovirus

HIV Infection:

Clinical Issues:

General management

Evaluation and management of early disease

- Advance directives evaluation
- Assessment of social support system
- Monitoring progression to AIDS
- Assessment of alternative health practices

Ongoing staging

- Diagnosing AIDS-defining opportunistic infections
- Functional assessment
- Mental status evaluation
- Nutritional assessment
- Referral to case-management agencies

Palliative and terminal care

Pregnancy counseling (pretest, post-test, risk factors)

Gynecologic complications

- Vaginal candidiasis
- Cervical dysplasia/neoplasia
- Pelvic inflammatory disease

ORGAN AND SYSTEM COMPETENCIES IN INTERNAL MEDICINE

Clinical Training and Education in Infectious Disease and HIV (Cont'd)

Infectious diseases (see also *preventive measures* below and specific organ-based complications)

- Mycobacterial disease
- Pneumocystis carinii* pneumonia
- Cytomegalovirus disease
- Syphilis (diagnosis, treatment)

Oral complications

Preventive measures

Antibiotic prophylaxis

- Pneumocystis carinii* pneumonia
- Tuberculosis

Antiretroviral drug therapy

Immunizations

Transmission of HIV

Mycobacterium avium complex

- Protease inhibitor therapy
- Toxoplasmosis

AIDS-defining malignancies

- Kaposi's sarcoma
- Non-Hodgkin's lymphoma
- Squamous cell carcinoma (cervix or anus)

Dermatologic complications

- Kaposi's sarcoma
- Scabies, folliculitis
- Seborrheic dermatitis
- Bacillary angiomatosis

Gastrointestinal complications

- Diarrhea
- Esophageal candidiasis
- Esophageal ulcer disease
- Hepatomegaly, hepatitis, jaundice
- Wasting syndrome

ORGAN AND SYSTEM COMPETENCIES IN INTERNAL MEDICINE

Clinical Training and Education in Infectious Disease and HIV (Cont'd)

Neurologic complications

- Dementia
- Central nervous system mass lesions
- Cryptococcal meningitis
- Neurosyphilis