

## ***I Basic Principles in the Diagnosis and Management of Infectious Diseases***

### ***A MICROBIAL PATHOGENESIS***

- 1 A Molecular Perspective of Microbial Pathogenicity*
- 2 The Human Microbiome of Local Body Sites and Their Unique Biology*
- 3 Prebiotics, Probiotics, and Synbiotics*

### ***B HOST DEFENSE MECHANISMS***

- 4 Innate (General or Nonspecific) Host Defense Mechanisms*
- 5 Adaptive Immunity: Antibodies and Immunodeficiencies*
- 6 Cell-Mediated Defense Against Infection*
- 7 Mucosal Immunity*
- 8 Granulocytic Phagocytes*
- 9 Complement and Deficiencies*
- 10 Human Genetics and Infection*
- 11 Nutrition, Immunity, and Infection*
- 12 Evaluation of the Patient With Suspected Immunodeficiency*

### ***C EPIDEMIOLOGY OF INFECTIOUS DISEASE***

- 13 Applied Epidemiology for the Infectious Diseases Physician*
- 14 Emerging and Reemerging Infectious Disease Threats*
- 15 Bioterrorism: An Overview*

### ***D CLINICAL MICROBIOLOGY***

- 16 The Clinician and the Microbiology Laboratory: Test Ordering, Specimen Collection, and Result Interpretation*

### ***E ANTIINFECTIVE THERAPY***

- 17 Principles of Antiinfective Therapy*
- 18 Molecular Mechanisms of Antibiotic Resistance in Bacteria*
- 19 Pharmacokinetics and Pharmacodynamics of Antiinfective Agents*
- 20 Penicillins and  $\beta$ -Lactamase Inhibitors*
- 21 Cephalosporins*
- 22 Ertapenem, Imipenem, Meropenem, Doripenem, and Aztreonam*
- 23 Antibiotic Allergy*
- 24 Fusidic Acid*
- 25 Aminoglycosides*
- 26 Tetracyclines, Glycylcyclines, and Chloramphenicol*
- 27 Rifamycins*
- 28 Metronidazole*
- 29 Macrolides and Clindamycin*
- 30 Glycopeptides (Vancomycin and Teicoplanin) and Lipoglycopeptides (Telavancin, Oritavancin, and Dalbavancin)*
- 31 Daptomycin and Quinupristin-Dalfopristin*
- 32 Polymyxins (Polymyxin B and Colistin)*
- 33 Linezolid, Tedizolid, and Other Oxazolidinones*
- 34 Sulfonamides and Trimethoprim; Trimethoprim-Sulfamethoxazole*
- 35 Quinolones*
- 36 Unique Antibacterial Agents*

37 Urinary Tract Agents: Nitrofurantoin, Fosfomycin, and Methenamine  
38 Topical Antibacterials  
39 Antimycobacterial Agents  
40A Antifungal Agents: Amphotericin B  
40B Antifungal Drugs: Azoles  
40C Antifungal Drugs: Echinocandins  
40D Antifungal Drugs: Flucytosine  
41 Antimalarial Drugs  
42 Drugs for Protozoal Infections Other Than Malaria  
43 Drugs for Helminths  
44 Antiviral Agents: General Principles  
45 Antiviral Drugs for Influenza and Other Respiratory Virus Infections  
46 Antivirals Against Herpesviruses  
47 Antiviral Drugs Against Hepatitis Viruses  
48 Miscellaneous Antiviral Agents (Interferons, Tecovirimat, Imiquimod, Pocopavir, Pleconaril)  
49 Immunomodulators  
50 Hyperbaric Oxygen  
51 Antimicrobial Stewardship  
52 Designing and Interpreting Clinical Studies in Infectious Diseases  
53 Outpatient Parenteral Antimicrobial Therapy  
54 Tables of Antiinfective Agent Pharmacology

**II Major Clinical Syndromes**

**A FEVER**

55 Temperature Regulation and the Pathogenesis of Fever  
56 Fever of Unknown Origin  
57 The Acutely Ill Patient With Fever and Rash

**B UPPER RESPIRATORY TRACT INFECTIONS**

58 The Common Cold  
59 Pharyngitis  
60 Acute Laryngitis  
61 Otitis Externa, Otitis Media, and Mastoiditis  
62 Sinusitis  
63 Epiglottitis  
64 Infections of the Oral Cavity, Neck, and Head

**C PLEUROPULMONARY AND BRONCHIAL INFECTIONS**

65 Acute Bronchitis  
66 Acute Exacerbations of Chronic Obstructive Pulmonary Disease  
67 Acute Pneumonia  
68 Pleural Effusion and Empyema  
69 Bacterial Lung Abscess  
70 Chronic Pneumonia  
71 Cystic Fibrosis

**D URINARY TRACT INFECTIONS**

72 Urinary Tract Infections

E SEPSIS

73 Sepsis and Septic Shock

F INTRAABDOMINAL INFECTIONS

74 Peritonitis and Intraoperative Abscesses

75 Infections of the Liver and Biliary System (Liver Abscess, Cholangitis, Cholecystitis)

76 Pancreatic Infection

77 Splenic Abscess

78 Appendicitis

79 Diverticulitis and Neutropenic Enterocolitis

G CARDIOVASCULAR INFECTIONS

80 Endocarditis and Intravascular Infections

81 Prosthetic Valve Endocarditis

82 Infections of Nonvalvular Cardiovascular Devices

83 Prevention of Infective Endocarditis

84 Myocarditis and Pericarditis

85 Mediastinitis

H CENTRAL NERVOUS SYSTEM INFECTIONS

86 Approach to the Patient With Central Nervous System Infection

87 Acute Meningitis

88 Chronic Meningitis

89 Encephalitis

90 Brain Abscess

91 Subdural Empyema, Epidural Abscess, and Suppurative Intracranial Thrombophlebitis

92 Cerebrospinal Fluid Shunt and Drain Infections

I SKIN AND SOFT TISSUE INFECTIONS

93 Cellulitis, Necrotizing Fasciitis, and Subcutaneous Tissue Infections

94 Myositis and Myonecrosis

95 Lymphadenitis and Lymphangitis

J GASTROINTESTINAL INFECTIONS AND FOOD POISONING

96 Syndromes of Enteric Infection

97 Esophagitis

98 Diarrhea With Little or No Fever

99 Acute Dysentery Syndromes (Diarrhea With Fever)

100 Typhoid Fever, Paratyphoid Fever, and Typhoidal Fevers

101 Foodborne Disease

102 Tropical Sprue and Environmental Enteric Dysfunction

K BONE AND JOINT INFECTIONS

103 Infectious Arthritis of Native Joints

104 Osteomyelitis

105 Orthopedic Implant–Associated Infections

L DISEASES OF THE REPRODUCTIVE ORGANS AND SEXUALLY TRANSMITTED DISEASES

106 Genital Skin and Mucous Membrane Lesions

107 Urethritis

108 Vulvovaginitis and Cervicitis

109 Infections of the Female Pelvis

110 Prostatitis, Epididymitis, and Orchitis

#### M EYE INFECTIONS

111 Introduction to Eye Infections

112 Microbial Conjunctivitis

113 Microbial Keratitis

114 Endophthalmitis

115 Infectious Causes of Uveitis

116 Periocular Infections

#### N HEPATITIS

117 Viral Hepatitis

#### O ACQUIRED IMMUNODEFICIENCY SYNDROME

118 Global Perspectives on Human Immunodeficiency Virus Infection and Acquired Immunodeficiency Syndrome

119 Epidemiology and Prevention of AIDS and HIV Infection, Including Preexposure Prophylaxis and HIV Vaccine Development

120 Diagnosis of Human Immunodeficiency Virus Infection

121 The Immunology of Human Immunodeficiency Virus Infection

122 General Clinical Manifestations of Human Immunodeficiency Virus Infection (Including Acute Retroviral Syndrome and Oral, Cutaneous, Renal, Ocular, Metabolic, and Cardiac Diseases)

123 Pulmonary Manifestations of Human Immunodeficiency Virus Infection

124 Gastrointestinal, Hepatobiliary, and Pancreatic Manifestations of Human Immunodeficiency Virus Infection

125 Neurologic Diseases Caused by Human Immunodeficiency Virus Type 1 and Opportunistic Infections

126 Human Immunodeficiency Virus Infection in Women

127 Pediatric Human Immunodeficiency Virus Infection

128 Antiretroviral Therapy for Human Immunodeficiency Virus Infection

129 Management of Opportunistic Infections Associated With Human Immunodeficiency Virus Infection

#### P MISCELLANEOUS SYNDROMES

130 Chronic Fatigue Syndrome (Systemic Exertion Intolerance Disease)

### **III Infectious Diseases and Their Etiologic Agents**

#### A VIRAL DISEASES

131 Biology of Viruses and Viral Diseases

132 Orthopoxviruses Vaccinia (Smallpox Vaccine), Variola (Smallpox), Monkeypox, and Cowpox

133 Other Poxviruses That Infect Humans: Parapoxviruses (Including Orf Virus), Molluscum Contagiosum, and Yatapoxviruses

134 Introduction to Herpesviridae

135 Herpes Simplex Virus

136 *Chickenpox and Herpes Zoster (Varicella-Zoster Virus)*  
137 *Cytomegalovirus*  
138 *Epstein-Barr Virus (Infectious Mononucleosis, Epstein-Barr Virus–Associated Malignant Diseases, and Other Diseases)*  
139 *Human Herpesvirus Types 6 and 7 (Exanthem Subitum)*  
140 *Kaposi Sarcoma–Associated Herpesvirus (Human Herpesvirus 8)*  
141 *Herpes B Virus*  
142 *Adenoviruses*  
143 *Papillomaviruses*  
144 *JC, BK, and Other Polyomaviruses: Progressive Multifocal Leukoencephalopathy (PML)*  
145 *Hepatitis B Virus*  
146 *Hepatitis Delta Virus*  
147 *Human Parvoviruses, Including Parvovirus B19V and Human Bocaparvoviruses*  
148 *Orthoreoviruses and Orbiviruses*  
149 *Coltivirus (Colorado Tick Fever Virus) and Seadornaviruses*  
150 *Rotaviruses*  
151 *Alphaviruses (Chikungunya, Eastern Equine Encephalitis)*  
152 *Rubella Virus (German Measles)*  
153 *Flaviviruses (Dengue, Yellow Fever, Japanese Encephalitis, West Nile Encephalitis, Usutu Encephalitis, St. Louis Encephalitis, Tick-Borne Encephalitis, Kyasanur Forest Disease, Alkhurma Hemorrhagic Fever, Zika)*  
154 *Hepatitis C*  
155 *Coronaviruses, Including Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)*  
156 *Parainfluenza Viruses*  
157 *Mumps Virus*  
158 *Respiratory Syncytial Virus*  
159 *Human Metapneumovirus*  
160 *Measles Virus (Rubeola)*  
161 *Zoonotic Paramyxoviruses: Nipah, Hendra, and Menangle Viruses*  
162 *Vesicular Stomatitis Virus and Related Vesiculoviruses (Chandipura Virus)*  
163 *Rabies (Rhabdoviruses)*  
164 *Marburg and Ebola Virus Hemorrhagic Fevers*  
165 *Influenza Viruses, Including Avian Influenza and Swine Influenza*  
166 *California Encephalitis, Hantavirus Pulmonary Syndrome, Hantavirus Hemorrhagic Fever With Renal Syndrome, and Bunyavirus Hemorrhagic Fevers*  
167 *Lymphocytic Choriomeningitis Virus, Lassa Virus, and the South American Hemorrhagic Fevers (Arenaviruses)*  
168 *Human T-Cell Leukemia Viruses (HTLV-1, HTLV-2)*  
169 *Human Immunodeficiency Viruses*  
170 *Introduction to the Human Enteroviruses and Parechoviruses*  
171 *Poliovirus*  
172 *Coxsackieviruses, Echoviruses, and Numbered Enteroviruses (EV-A71, EVD-68,*

EVD-70)

173 Parechoviruses

174 Hepatitis A Virus

175 Rhinovirus

176 Noroviruses and Sapoviruses (Caliciviruses)

177 Astroviruses and Picobirnaviruses

178 Hepatitis E Virus

#### B PRION DISEASES

179 Prions and Prion Disease of the Central Nervous System (Transmissible Neurodegenerative Diseases)

#### C CHLAMYDIAL DISEASES

180 *Chlamydia trachomatis* (Trachoma and Urogenital Infections)

181 Psittacosis (Due to *Chlamydia psittaci*)

182 *Chlamydia pneumoniae*

#### D MYCOPLASMA DISEASES

183 *Mycoplasma pneumoniae* and Atypical Pneumonia

184 Genital Mycoplasmas: *Mycoplasma genitalium*, *Mycoplasma hominis*, and *Ureaplasma* Species

#### E RICKETTSIOSES, EHRLICHIOSES, AND ANAPLASMOSSES

185 Introduction to Rickettsioses, Ehrlichioses, and Anaplasmoses

186 *Rickettsia rickettsii* and Other Spotted Fever Group Rickettsiae (Rocky Mountain Spotted Fever and Other Spotted Fevers)

187 *Rickettsia akari* (Rickettsialpox)

188 *Coxiella burnetii* (Q Fever)

189 *Rickettsia prowazekii* (Epidemic or Louse-Borne Typhus)

190 *Rickettsia typhi* (Murine Typhus)

191 *Orientia tsutsugamushi* (Scrub Typhus)

192 *Ehrlichia chaffeensis* (Human Monocytotropic Ehrlichiosis), *Anaplasma phagocytophilum* (Human Granulocytotropic Anaplasmosis), and Other Anaplasmataceae

#### F BACTERIAL DISEASES

193 Introduction to Bacteria and Bacterial Diseases

194 *Staphylococcus aureus* (Including Staphylococcal Toxic Shock Syndrome)

195 *Staphylococcus epidermidis* and Other Coagulase-Negative Staphylococci

196 Classification of Streptococci

197 *Streptococcus pyogenes*

198 Nonsuppurative Poststreptococcal Sequelae: Rheumatic Fever and Glomerulonephritis

199 *Streptococcus pneumoniae*

200 Enterococcus Species, *Streptococcus gallolyticus* Group, and *Leuconostoc* Species

201 *Streptococcus agalactiae* (Group B Streptococci)

202 Viridans Streptococci, Nutritionally Variant Streptococci, and Groups C and G Streptococci

203 *Streptococcus anginosus* Group

- 204 *Corynebacterium diphtheriae* (Diphtheria)
- 205 Other Coryneform Bacteria, *Arcanobacterium haemolyticum*, and Rhodococci
- 206 *Listeria monocytogenes*
- 207 *Bacillus anthracis* (Anthrax)
- 208 *Bacillus* Species and Related Genera Other Than *Bacillus anthracis*
- 209 *Erysipelothrix Rhusiopathiae*
- 210 Whipple Disease
- 211 *Neisseria meningitidis*
- 212 *Neisseria gonorrhoeae* (Gonorrhea)
- 213 *Moraxella catarrhalis*, *Kingella*, and Other Gram-Negative Cocci
- 214 *Vibrio cholerae*
- 215 Other Pathogenic Vibrios
- 216 *Campylobacter jejuni* and Related Species
- 217 *Helicobacter pylori* and Other Gastric *Helicobacter* Species
- 218 Enterobacteriaceae
- 219 *Pseudomonas aeruginosa* and Other *Pseudomonas* Species
- 220 *Stenotrophomonas maltophilia* and *Burkholderia cepacia* Complex
- 221 *Burkholderia pseudomallei* and *Burkholderia mallei*: Melioidosis and Glanders
- 222 *Acinetobacter* Species
- 223 *Salmonella* Species
- 224 Bacillary Dysentery: *Shigella* and Enteroinvasive *Escherichia coli*
- 225 *Haemophilus* Species, Including *H. influenzae* and *H. ducreyi* (Chancroid)
- 226 Brucellosis (*Brucella* Species)
- 227 *Francisella tularensis* (Tularemia)
- 228 *Pasteurella* Species
- 229A Plague (*Yersinia pestis*)
- 229B *Yersinia enterocolitica* and *Yersinia pseudotuberculosis*
- 230 *Bordetella pertussis*
- 231 Rat-Bite Fever: *Streptobacillus moniliformis* and *Spirillum minus*
- 232 Legionnaires' Disease and Pontiac Fever
- 233 *Capnocytophaga*
- 234 *Bartonella*, Including Cat-Scratch Disease
- 235 *Klebsiella granulomatis* (Donovanosis, Granuloma Inguinale)
- 236 Other Gram-Negative and Gram-Variable Bacilli
- 237 Syphilis (*Treponema pallidum*)
- 238 Endemic Treponematoses
- 239 *Leptospira* Species (Leptospirosis)
- 240 Relapsing Fever Caused by *Borrelia* Species
- 241 Lyme Disease (Lyme Borreliosis) Due to *Borrelia burgdorferi*
- 242 Anaerobic Infections: General Concepts
- 243 *Clostridioides difficile* (Formerly *Clostridium difficile*) Infection
- 244 Tetanus (*Clostridium tetani*)
- 245 Botulism (*Clostridium botulinum*)
- 246 Diseases Caused by *Clostridium*

247 *Bacteroides, Prevotella, Porphyromonas, and Fusobacterium Species (and Other Medically Important Anaerobic Gram-Negative Bacilli)*

248 *Anaerobic Cocci and Anaerobic Gram-Positive Nonsporulating Bacilli*

249 *Mycobacterium tuberculosis*

250 *Leprosy (Mycobacterium leprae)*

251 *Mycobacterium avium Complex*

252 *Infections Caused by Nontuberculous Mycobacteria Other Than Mycobacterium avium Complex*

253 *Nocardia Species*

254 *Agents of Actinomycosis*

G MYCOSES

255 *Introduction to Mycoses*

256 *Candida Species*

257 *Aspergillus Species*

258 *Agents of Mucormycosis and Entomophthoromycosis*

259 *Sporothrix schenckii*

260 *Agents of Chromoblastomycosis*

261 *Agents of Mycetoma*

262 *Cryptococcosis (Cryptococcus neoformans and Cryptococcus gattii)*

263 *Histoplasma capsulatum (Histoplasmosis)*

264 *Blastomycosis*

265 *Coccidioidomycosis (Coccidioides Species)*

266 *Dermatophytosis (Ringworm) and Other Superficial Mycoses*

267 *Paracoccidioidomycosis*

268 *Uncommon Fungi and Related Species*

269 *Pneumocystis Species*

270 *Microsporidiosis*

H PROTOZOAL DISEASES

271 *Introduction to Protozoal Diseases*

272 *Entamoeba Species, Including Amebic Colitis and Liver Abscess*

273 *Free-Living Amebae*

274 *Malaria (Plasmodium Species)*

275 *Leishmania Species: Visceral (Kala-Azar), Cutaneous, and Mucosal Leishmaniasis*

276 *Trypanosoma Species (American Trypanosomiasis, Chagas Disease): Biology of Trypanosomes*

277 *Agents of African Trypanosomiasis (Sleeping Sickness)*

278 *Toxoplasma gondii*

279 *Giardia lamblia*

280 *Trichomonas vaginalis*

281 *Babesia Species*

282 *Cryptosporidiosis (Cryptosporidium Species)*

283 *Cyclospora cayetanensis, Cystoisospora belli, Sarcocystis Species, Balantidium coli, and Blastocystis Species*

I DISEASES DUE TO TOXIC ALGAE



284 *Human Illness Associated With Harmful Algal Blooms*

**J DISEASES DUE TO HELMINTHS**

285 *Introduction to Helminth Infections*

286 *Intestinal Nematodes (Roundworms)*

287 *Tissue Nematodes, Including Trichinellosis, Dracunculiasis, Filariasis, Loiasis, and Onchocerciasis*

288 *Trematodes (Schistosomes and Liver, Intestinal, and Lung Flukes)*

289 *Tapeworms (Cestodes)*

290 *Visceral Larva Migrans and Other Uncommon Helminth Infections*

**K ECTOPARASITIC DISEASES**

291 *Introduction to Ectoparasitic Diseases*

292 *Lice (Pediculosis)*

293 *Scabies*

294 *Myiasis and Tungiasis*

295 *Mites, Including Chiggers*

296 *Ticks, Including Tick Paralysis*

**L DISEASES OF UNKNOWN ETIOLOGY**

297 *Kawasaki Disease*

**IV Special Problems**

**A NOSOCOMIAL INFECTIONS**

298 *Infection Prevention and Control in the Health Care Setting*

299 *Disinfection, Sterilization, and Control of Hospital Waste*

300 *Infections Caused by Percutaneous Intravascular Devices*

301 *Nosocomial Pneumonia*

302 *Health Care–Associated Urinary Tract Infections*

303 *Health Care–Acquired Hepatitis*

304 *Transfusion- and Transplantation-Transmitted Infections*

**B INFECTIONS IN SPECIAL HOSTS**

305 *Infections in the Immunocompromised Host: General Principles*

306 *Prophylaxis and Empirical Therapy of Infection in Cancer Patients*

307 *Infections in Recipients of Hematopoietic Stem Cell Transplants*

308 *Infections in Solid-Organ Transplant Recipients*

309 *Infections in Patients With Spinal Cord Injury*

310 *Infections in Older Adults*

311 *Infections in Asplenic Patients*

312 *Infections in Injection Drug Users*

313 *Surgical Site Infections and Antimicrobial Prophylaxis*

**C SURGICAL- AND TRAUMA-RELATED INFECTIONS**

314 *Burns*

315 *Bites*

**D IMMUNIZATION**

316 *Immunization*

**E ZOOZOSES**

317 *Zoonoses*

*F PROTECTION OF TRAVELERS*

*318 Protection of Travelers*

*319 Infections in Returning Travelers*