RICHARD A. LEHNE

PHARMACOLOGY

for NURSING
CARE

SEVENTH EDITION





Contents

I. INTRODUCTION

- 1. Orientation to Pharmacology, I
- 2. Application of Pharmacology in Nursing Practice, 5
- 3. Drug Regulation, Development, Names, and Information, 15

II. BASIC PRINCIPLES OF PHARMACOLOGY

- 4. Pharmacokinetics, 25
- 5. Pharmacodynamics. 46
- 6. Drug Interactions, 57
- 7. Adverse Drug Reactions and Medication Errors, 64
- 8. Individual Variation in Drug Responses, 77

III. DRUG THERAPY ACROSS THE LIFE SPAN

- Drug Therapy During Pregnancy and Breast-Feeding, 85
- 10. Drug Therapy in Pediatric Patients, 92
- 11. Drug Therapy in Geriatric Patients, 96

IV. PERIPHERAL NERVOUS SYSTEM DRUGS

Introduction

- 12. Basic Principles of Neuropharmacology, 100
- 13. Physiology of the Peripheral Nervous System, *106* **Cholinergic Drugs**

14. Muscarinic Agonists and Antagonists, 121

- 15. Cholinesterase Inhibitors and Their Use in Myasthenia Gravis, 131
- 16. Drugs That Block Nicotinic Cholinergic Transmission: Neuromuscular Blocking Agents and Ganglionic Blocking Agents, 139

Adrenergic Drugs

- 17. Adrenergic Agonists, 149
- 18. Adrenergic Antagonists, 162
- 19. Indirect-Acting Antiadrenergic Agents, 174

V. CENTRAL NERVOUS SYSTEM DRUGS

Introduction

20. Introduction to Central Nervous System Pharmacology, 179

Drugs for Neurodegenerative Disorders

- 21. Drugs for Parkinson's Disease, 182
- 22. Alzheimer's Disease, 198
- 23. Drugs for Multiple Sclerosis, 206

Neurologic Drugs

- 24. Drugs for Epilepsy, 218
- 25. Drugs for Muscle Spasm and Spasticity, 240

Drugs for Pain

- 26. Local Anesthetics. 245
- 27. General Anesthetics, 252
- 28. Opioid (Narcotic) Analgesics, Opioid Antagonists, and Nonopioid Centrally Acting Analgesics, 261

- 29. Pain Management in Patients with Cancer, 286
- 30. Drugs for Headache, 305

Psychotherapeutic Drugs

- 31. Antipsychotic Agents and Their Use in Schizophrenia, *316*
- 32. Antidepressants, 336
- 33. Drugs for Bipolar Disorder, 359
- 34. Sedative-Hypnotic Drugs, 368
- 35. Management of Anxiety Disorders, 383
- 36. Central Nervous System Stimulants and Attention-Deficit/Hyperactivity Disorder, 391

Drug Abuse

- 37. Drug Abuse I: Basic Considerations, 403
- 38. Drug Abuse II: Alcohol, 410
- 39. Drug Abuse III: Major Drugs of Abuse (Other Than Alcohol), *421*

VI. DRUGS THAT AFFECT FLUID AND ELECTROLYTE BALANCE

- 40. Diuretics, 443
- 41. Agents Affecting the Volume and Ion Content of Body Fluids, 455

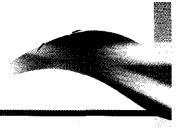
VII. DRUGS THAT AFFECT THE HEART, BLOOD VESSELS, AND BLOOD

- 42. Review of Hemodynamics, 460
- 43. Drugs Acting on the Renin-Angiotensin-Aldosterone System, 466
- 44. Calcium Channel Blockers, 480
- 45. Vasodilators, 488
- 46. Drugs for Hypertension, 494
- 47. Drugs for Heart Failure, 516
- 48. Antidysrhythmic Drugs, 533
- 49. Prophylaxis of Coronary Heart Disease: Drugs That Help Normalize Cholesterol and Triglyceride Levels, 553
- 50. Drugs for Angina Pectoris, 580
- 51. Anticoagulant, Antiplatelet, and Thrombolytic Drugs, 594
- 52. Management of ST-Elevation Myocardial Infarction, *619*
- 53. Drugs for Hemophilia, 625
- 54. Drugs for Deficiency Anemias, 633
- 55. Hematopoietic Growth Factors, 647

VIII. DRUGS FOR ENDOCRINE DISORDERS

- 56. Drugs for Diabetes Mellitus, 657
- 57. Drugs for Thyroid Disorders, 689
- 58. Drugs Related to Hypothalamic and Pituitary Function, 701
- 59. Drugs for Disorders of the Adrenal Cortex, 710

Contents



IX. WOMEN'S HEALTH

- 60. Estrogens and Progestins: Basic Pharmacology and Noncontraceptive Applications, 718
- 61. Birth Control, 736
- 62. Drug Therapy of Infertility, 752
- 63. Drugs That Affect Uterine Function, 760

X. MEN'S HEALTH

- 64. Androgens, 769
- 65. Drugs for Erectile Dysfunction and Benign Prostatic Hyperplasia, 777

XI. ANTI-INFLAMMATORY, ANTIALLERGIC, AND IMMUNOLOGIC DRUGS

- 66. Review of the Immune System, 785
- 67. Childhood Immunization, 796
- 68. Immunosuppressants, 814
- 69. Antihistamines, 821
- 70. Cyclooxygenase Inhibitors: Nonsteroidal Antiinflammatory Drugs and Acetaminophen, 828
- 71. Glucocorticoids in Nonendocrine Diseases, 846

XII. DRUGS FOR BONE AND JOINT DISORDERS

- 72. Drug Therapy of Rheumatoid Arthritis, 856
- 73. Drug Therapy of Gout, 864
- 74. Drugs Affecting Calcium Levels and Bone Mineralization, 868

XIII. RESPIRATORY TRACT DRUGS

- 75. Drugs for Asthma, 888
- 76. Drugs for Allergic Rhinitis, Cough, and Colds, 907

XIV. GASTROINTESTINAL DRUGS

- 77. Drugs for Peptic Ulcer Disease, 915
- 78. Laxatives, 929
- 79. Other Gastrointestinal Drugs, 936

XV. NUTRITION

- 80. Vitamins, 951
- 81. Drugs for Obesity, 962

XVI. CHEMOTHERAPY OF INFECTIOUS DISEASES

- 82. Basic Principles of Antimicrobial Therapy, 970
- 83. Drugs That Weaken the Bacterial Cell Wall I: Penicillins, *984*
- 84. Drugs That Weaken the Bacterial Cell Wall II: Cephalosporins, Carbapenems, Vancomycin, Aztreonam, Teicoplanin, and Fosfomycin, *995*
- 85. Bacteriostatic Inhibitors of Protein Synthesis: Tetracyclines, Macrolides, and Others, *1005*

- 86. Aminoglycosides: Bactericidal Inhibitors of Protein Synthesis, 1017
- 87. Sulfonamides and Trimethoprim, 1025
- 88. Drug Therapy of Urinary Tract Infections, 1032
- Antimycobacterial Agents: Drugs for Tuberculosis, Leprosy, and *Mycobacterium avium* Complex Infection, 1037
- 90. Miscellaneous Antibacterial Drugs: Fluoroquinolones, Metronidazole, Daptomycin, Rifampin, Bacitracin, and Polymyxins, *1052*
- 91. Antifungal Agents, 1057
- 92. Antiviral Agents I: Drugs for Non-HIV Viral Infections, 1070
- 93. Antiviral Agents II: Drugs for HIV Infection and Related Opportunistic Infections, 1087
- 94. Drug Therapy of Sexually Transmitted Diseases, 1132
- 95. Antiseptics and Disinfectants, 1140

XVII. CHEMOTHERAPY OF PARASITIC DISEASES

- 96. Anthelmintics, 1146
- 97. Antiprotozoal Drugs I: Antimalarial Agents, 1151
- 98. Antiprotozoal Drugs II: Miscellaneous Agents, 1158
- 99. Ectoparasiticides, 1164

XVIII. CANCER CHEMOTHERAPY

- 100. Basic Principles of Cancer Chemotherapy, 1167
- 101. Anticancer Drugs I: Cytotoxic Agents, 1181
- 102. Anticancer Drugs II: Hormonal Agents, Biologic Response Modifiers, and Targeted Drugs, 1197

XIX. ADDITIONAL IMPORTANT DRUGS

- 103. Drugs for the Eye, 1217
- 104. Drugs for the Skin, 1227
- 105. Drugs for the Ear, 1244
- 106. Miscellaneous Noteworthy Drugs, 1250

XX. ALTERNATIVE THERAPY

107. Dietary Supplements, 1261

XXI. TOXICOLOGY

- 108. Management of Poisoning, 1273
- Potential Weapons of Biologic, Radiologic, and Chemical Terrorism, 1279

APPENDIXES

- A, Adult Immunization, United States, 2009, 1289
- B, Guide to Gender-Related Drugs, 1293
- C, Commonly Used Abbreviations, 1294
- D. Canadian Drug Information, 1296
- E, Major Drug Classes and Their Prototypes, 1300
- F, Very New Drugs and Important New Formulations of Older Drugs, 1306