

Third
Edition

Clinical Pharmacology and Therapeutics

for Students and Practitioners

For Students

- New chapters based on CBME Guidelines | Competency Based Undergraduate Curriculum for the Indian Medical Graduate
- Lecture-note style of chapters throughout the textbook for easy understanding and rapid revision.
- Various practical aspects of prescribing, including list of drugs with single indication and multiple indications.
- System-wise adverse drug reactions for easy reference.
- Designer drugs, spurious drugs and off-label use of drugs.
- Chronopharmacology
- Drugs and sexual dysfunction
- Clinical evaluation and research.

For Practitioners

- Simple style for rapid reading and revision.
- Chapters on fixed-dose combinations, rational use of antimicrobials, prescription errors, guidelines for prescribing and common prescriptions in practice.
- Practical aspects of insulin therapy.
- Drug use in pregnancy, lactation, special situations and extremes of age.
- Clinically important drug interactions and food interactions.
- Chapter on drug promotional literature.

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He has been a postgraduate teacher and research guide of Goa University in pharmacology since 2001, and approved guide for research projects under Indian Council of Medical Research. He has 34 years' experience in teaching pharmacology.

He has to his credit over 100 research papers published in national and international medical journals. He has been a resource person/guest faculty at more than 100 CMEs, awareness programmes, workshops and conferences in and outside Goa. He was appointed 'national professor' by the Indian Medical Association College of General Practitioners, Chennai, in 2009; awarded 'Best President of IMA Goa State' for 2009; 'Best Citizen of India Award' by International Publishing House, New Delhi, in 2009; and 'Bharat Shiksha Ratan Award' in the field of medical education and research by Global Achievers' Foundation, New Delhi, for 2013.



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to
my **Gurus,**
for guiding me to create this work successfully
my **Teachers,**
for encouraging me to make the right use of my ability
my **Students,**
for helping me to develop my teaching skills

Foreword

It gives me great pleasure to write this foreword for the new textbook *Clinical Pharmacology and Therapeutics* by Dr PV Rataboli who has been my undergraduate as well as postgraduate student. To my mind, there are five essential prerequisites to writing a book in medical sciences. The author must have broad and deep knowledge of the subject, he ought to be continuously striving to keep himself abreast of recent advances in the speciality, he must have natural aptitude and love for teaching, he must have put in several years in teaching and he should have a flair for writing. Dr Rataboli satisfies all these criteria in abundant measure. He is one of the most sought after teachers of the college and has his fingers on the pulse of student community. The book itself as the title reveals focuses on clinical or applied aspects of pharmacology and rational basis for the use of drugs in therapy. It is evident that the author has put himself in the shoes of students whilst doing the job. Dr Rataboli has taken pains not to miss any aspect—new, informative or important—be it the newer drug delivery systems, antiplatelet drugs, anti-epileptic agents or chemotherapy. I must make special mention of the “Special topics in Pharmacology” in Part E, wherein, amongst other things, the author has listed ADRs systemwise, discussed drugs with single indication and those with multiple indications and given guidelines for prescribing. It goes to the credit of the author that though all areas in pharmacology have been covered, the book is not unwieldy. The treatise is concise, complete, clinical and clear. I am sure second MBBS students will find the book a great help in studying pharmacology. The book should come in handy for final MBBS students also to quickly revise the subject and will serve as a ready reference for busy practitioners. There is need of such treatises for students of pharmacy, dentistry, nursing, etc. and I hope the author will bring out suitably modified versions of the present book for students of these streams. I wish the book all success.

Dr VG Dhume

Former Professor and Head
Department of Pharmacology
and
Ex-Dean, Goa Medical College, Goa

Foreword

Pharmacology is perhaps the fastest changing speciality in the medical field. Just till a few years back, it used to take about ten years to develop a new molecule, however, thanks to bioinformatics this period has been reduced to just two years. This has resulted in a deluge of new molecules in last few years. While this has resulted in newer treatment options for the clinicians, at the same time this has also resulted in a problem for the clinician as to how to distinguish good from bad products. The clinician, due to his busy practice, cannot go through the voluminous data available in standard pharmacology textbooks and thus relies upon the medical representatives for the information about all new products and the medical representatives, like all good business marketing norms will tell only the rosy side of their product, thus feeding the clinician with half the data. This is not a good medical practice. Under these circumstances, what is required is a good, concise and easily decipherable book that will help a clinician keep up-to-date with the newer as well as old products.

Dr PV Rataboli has successfully compiled an excellent treatise on the clinical pharmacology, keeping in mind the pressing needs of the clinicians these days. I know Dr Rataboli for more than two decades. He is an excellent teacher and is much sought after by the students for help in pharmacology. His lectures are very lucid and even difficult subject is made simple and interesting by him. He is a good orator and a superb writer. I have seen his contributions in the college magazine as well as Archives of Goa Medical College. They are very high quality literary pieces. I am sure the clinicians as well as the students of pharmacology will benefit tremendously from this masterpiece from Dr Rataboli.

The book has been very thoughtfully divided into five parts. Part A deals briefly with the general pharmacology that is a must to understand the clinical pharmacology. Part B deals with detailed clinical aspects of pharmacology and this is going to be the most useful section for the clinicians. This section has been further subdivided into individual body systems thus making it easy to refer to the book. Keeping in mind the increasing role of chemotherapy, one full section is devoted to the chemotherapy and immunopharmacology. Part D deals with the applied aspects of pharmacology. This is a unique section and addresses day-to-day clinical problems faced by the clinicians. I am sure this is going to be very popular section with the clinicians. Similarly the last section on special topics in pharmacology is also very well written wherein topics like adverse drug reactions, drug interactions, toxicology and rational drug use, etc. have been written in a simple and understandable manner.

On the whole, the book is very well compiled and is written in a very lucid way so that even a busy clinician who does not have much time will find it a great companion. I strongly recommend this book not only to the clinicians but also to the students of pharmacology, both at undergraduate as well as postgraduate level. Even senior consultants can use this book as a reference guide.

Dr VN Jindal
Dean, Goa Medical College, Goa

Preface to the Third Edition

Pharmacology is advancing by leaps and bounds and it was the need of the hour to update this textbook. New CBME is now introduced for MBBS Curriculum and many new topics are added to pharmacology syllabus. Considering these facts, it is my pleasure to bring out the third edition of this textbook which was long overdue.

This edition is extensively updated and now includes 16 new chapters with a new section on community pharmacology. Addition of topics like prescription errors, rational use of antimicrobials, insulin therapy, drug interactions with food and fixed dose combinations can be useful addition to the practising doctors who can refer this concise textbook for ready reference.

I am thankful to Mr YN Arjuna and his team of CBS Publishers and Distributors Pvt Ltd for all the co-operation and excellent designing of this new edition. My special thanks to Mr Manish for his initiative to get this new edition published.

Many thanks to Dr. Laveena Bandodkar, Mrs. Leea L. Phadte, Mr. Umesh Aroskar, Mr. Laxmikant Nagvenkar and Dr. Rahila Mulla for their help.

I thank all the readers for their appreciation and advice from time to time.

Hope this new updated edition meets the requirements of all students as well as practitioners.

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Preface to the First Edition

Faith gives us the courage to tackle the seemingly impossible, as well as the determination to see it through. I never thought I could and would write a medical textbook. The seed of this idea was first sown in my mind by my guide Professor Dr VG Dhume who said to me a few years back that it would be a good idea for me to write a concise book for students. I began to believe in my ability but the things never happened. The matter was planned but the book did not progress.

The book is written with two ‘Cs’ in mind—concise and complete. In addition to general and systemic pharmacology, the book also includes chapters on adverse drug reactions, drug interactions, clinical research, toxicology, drug use in pregnancy and other special situations, therapeutic drug monitoring, pharmacoconomics and common prescriptions in general practice. The book is designed in a concise lecture-note type format that can be easily assimilated by the students of medicine, dentistry and pharmacy, and can also serve as a rapid reference to postgraduates, and general practitioners who are short of time to refer to bigger textbooks.

Our beloved Dean, Professor Dr VN Jindal has been kind enough to write words of encouragement for the book. He has been a source of inspiration and support since my early days in the department. I thank him wholeheartedly.

Professor Dr VG Dhume, former Professor and Head, Department of Pharmacology and former Dean, Goa Medical College has obliged by writing the ‘foreword’ for this book. He taught me the art of writing. He was one of the best teachers of our time and I was fortunate to work under his guidance. I have no words to thank him enough for all that he has done.

I wish to thank my senior and junior colleagues in the department for their support during the progress of the book. I have been extremely lucky to get the encouragement and acknowledgement from my dear students, past and present. I thank them all.

Thanks are due to Mr. Dinesh R. Manerkar for his sincere advice from time to time. Many thanks to Mrs Seema Lolayekar for her technical assistance.

There are two more people to acknowledge—Sheilaja my wife and Neha my daughter. I have utilised a lot of their time for this book. They deserve to be thanked.

“The tougher the problem, the more reason to ask the all-knowing, all-wise, all-loving God for guidance”—I thank him and my Gurus for their guidance when the going was tough.

Hope this book meets the expectations of its readers. Criticism and suggestions are welcome to make further editions better.

Contents

PART A DRUG DISCOVERY AND GENERAL PHARMACOLOGY

SECTION 1 Drug Discovery and Man

1. Drug Discovery and Man 3

SECTION 2 General Pharmacology

2. Routes of Administration and Dosage Forms 9
3. Clinical Pharmacokinetics 26
4. Pharmacodynamics 40
5. Chronopharmacology 47

PART B CLINICAL PHARMACOLOGY OF ORGAN SYSTEMS

SECTION 3 Autonomic Nervous System

6. Adrenergic System: Receptors and Agonists 55
7. Adrenergic System: Antiadrenergics 63
8. Cholinergic System: Receptors and Agonists 71
9. Cholinergic System: Anticholinergics 77
10. Skeletal Muscle Relaxants (Neuromuscular Blocking Agents) and Drugs for Muscle Spasms 80

SECTION 4 Renal and Cardiovascular System

11. Diuretics and Antidiuretics 85
12. Antianginal Drugs 92
13. Antihypertensives 101
14. Pharmacotherapy of Heart Failure 115
15. Antiarrhythmics 123
16. Pharmacotherapy of Shock 132

SECTION 5 Central Nervous System

17. General Anaesthetics 137
18. Local Anaesthetics 143

19. Sedatives and Hypnotics.....	147
20. Antiepileptics.....	152
21. Drugs Used in Psychiatric Disorders.....	161
22. Opioid Analgesics.....	173
23. Drug Therapy of Parkinsonism.....	179
24. Drug Therapy of Alzheimer's Disease and Drugs in Amyotrophic Lateral Sclerosis.....	185
25. Drugs Used in Multiple Sclerosis.....	188
SECTION 6 Respiratory System	
26. Drugs Used in Cough	195
27. Drugs Used in Bronchial Asthma.....	199
SECTION 7 Haemopoietic System	
28. Iron Therapy	208
29. Antiplatelet Drugs (Antithrombotics).....	212
30. Anticoagulants.....	216
31. Thrombolytic Agents.....	223
32. Haematopoietic Growth Factors, Vitamin B ₁₂ and Folic Acid.....	227
33. Lipid Lowering Drugs (Hypolipidemic Agents)	231
SECTION 8 Gastrointestinal System	
34. Drugs in Peptic Ulcer Disease	238
35. Drugs in Diarrhoea and Constipation	243
36. Drugs in Nausea and Vomiting	249
37. Drugs in Inflammatory Bowel Disease, Flatulence, Irritable Bowel Syndrome and Cholelithiasis.....	252
SECTION 9 Endocrine System	
38. Antidiabetics.....	257
39. Insulin therapy	274
40. Drugs in Thyroid Disorders.....	281
41. Corticosteroids.....	286
42. Drugs Used in Osteoporosis	292
SECTION 10 Reproductive System	
43. Drugs and the Male Reproductive System	299
44. Drugs and the Female Reproductive System.....	305
45. Hormonal Contraceptives	315
46. Drugs and Sexual Dysfunction.....	320
SECTION 11 Autacoids and Inflammation	
47. Antihistaminics and Histamine Agonists	327
48. Prostaglandins and 5-Hydroxytryptamine	330
49. Non-steroidal Anti-Inflammatory Drugs	334
50. Pharmacotherapy of Migraine	340
51. Pharmacotherapy of Gout.....	344
52. Drugs in Rheumatoid Arthritis	349

PART C	CHEMOTHERAPY AND IMMUNOPHARMACOLOGY
---------------	--

SECTION 12 General Considerations of Chemotherapy

53. General Considerations of Chemotherapy..... 357

SECTION 13 General Chemotherapy

54. Sulfonamides, Trimethoprim and Cotrimoxazole 367
 55. Penicillins 371
 56. Cephalosporins 378
 57. Carbapenems and Monobactams 384
 58. Aminoglycosides 388
 59. Fluoroquinolones 392
 60. Macrolides and Ketolides 397
 61. Tetracyclines, Chloramphenicol, and Glycylcyclines 402
 62. Lincosamides, Glycopeptides, Novobiocin, Dalfopristin-Quinupristin, Oxazolidinones, Lipopeptides and Polypeptides..... 406

SECTION 14 Antiviral and Antifungal Chemotherapy

63. Antiviral Drugs (Non-Retroviral)..... 413
 64. Antiretroviral Drugs 420
 65. Antifungal Drugs 430

SECTION 15 Specific Chemotherapy (Microbial Infections)

66. Chemotherapy of Tuberculosis..... 438
 67. Chemotherapy of Leprosy 446
 68. Chemotherapy of Urinary Tract Infection 451
 69. Chemotherapy of Sexually Transmitted Diseases (STDs) 455
 70. Drugs in Acne..... 458

SECTION 16 Specific Chemotherapy (Parasitic Infections)

71. Chemotherapy of Malaria..... 462
 72. Chemotherapy of Amoebiasis 472
 73. Chemotherapy of Helminthiasis 476

SECTION 17 Antimalignancy Chemotherapy

74. Antimalignancy Chemotherapy 483

SECTION 18 Immunomodulators

75. Immunomodulators 498

PART D	APPLIED PHARMACOLOGY
---------------	-----------------------------

SECTION 19 Drug Use in Pregnancy and Lactation

76. Drug Use in Pregnancy and Lactation..... 506

SECTION 20 Drug Use in Special Situations

77. Drug Use in Special Situations 516

SECTION 21 Drug Use at Extremes of Age

78. Drug Use at Extremes of Age 520

SECTION 22 Ocular Pharmacology

79. Ocular Pharmacology	528
-------------------------------	-----

PART E COMMUNITY PHARMACOLOGY AND HERBAL MEDICINES**SECTION 23 Community Pharmacology**

80. Pesticides and Insect Repellants	536
81. Pollutants	540

SECTION 24 Herbal Medicines

82. Nutraceuticals, Dietary Supplements and Herbal Medicines	545
83. Food Adulterants	550

PART F SPECIAL TOPICS IN PHARMACOLOGY**SECTION 25 Adverse Drug Reactions**

84. General Concepts.....	556
85. Systemwise Adverse Drug Reactions.....	561

SECTION 26 Drug Interactions

86. General Concepts.....	591
87. Clinically Important Drug Interactions.....	597
88. Drug Interactions with Food/Nutrients.....	601

SECTION 27 Drugs of Abuse, Drug Promotion and Drug Ethics

89. Drugs of Abuse and Drug Dependence	607
90. Designer Drugs (Legal Highs).....	616
91. Spurious Drugs	623
92. Drug Promotional Literature	627

SECTION 28 Toxicology

93. Toxicology.....	631
---------------------	-----

SECTION 29 Drugs and their Indications

94. Drugs with Single Indication	637
95. Drugs with Multiple Indications.....	641

SECTION 30 Clinical Evaluation and Research

96. Clinical Trials	646
97. Ethics and Human Experimentation	649
98. Banned and Unsafe Drugs	653
99. Role of Ethics Committees in Clinical Research.....	657

SECTION 31 Therapeutic Drug Monitoring and Pharmacoeconomics

100. Therapeutic Drug Monitoring and Pharmacoeconomics	663
--	-----

SECTION 32 Rational Use of Drugs

101. Fixed Dose Combinatios	667
102. Off-Label Use of Drugs.....	674
103. Rational Use of Antimicrobials	680

	104. Prescription Errors in Clinical Practice	683
	105. Guidelines to Prescribing: Points to Remember	689
	106. Common Prescriptions in Practice	697
<i>Appendix I</i>	Winners of Nobel Prize for their Contribution to Pharmacology	705
<i>Appendix II</i>	New Drugs Approved by CDSCO India (2018–2020).....	707
Bibliography	709
Index	711

