

Clinical Therapeutics

DAVID T. LOWENTHAL
DAVID A. MAJOR
Editors

THE FORTY-SEVENTH HAHNEMANN SYMPOSIUM

The Forty-seventh Hahnemann Symposium

Clinical Therapeutics

Editors

David T. Lowenthal, M.D.

*Associate Professor of Medicine and Pharmacology
Director, Clinical Pharmacology Unit
Hahnemann Medical College and Hospital
Philadelphia, Pennsylvania*

David A. Major, M.D.

*Professor of Medicine
Associate Chairman for Education, Department of Medicine
Hahnemann Medical College and Hospital
Philadelphia, Pennsylvania*



GRUNE & STRATTON

A Subsidiary of Harcourt Brace Jovanovich, Publishers

New York

San Francisco

London

Library of Congress Cataloging in Publication Data

Main entry under title:

Clinical therapeutics.

Bibliography: p.

Includes index.

1. Chemotherapy. 2. Pharmacology. I.

Lowenthal, David T. II. Major, David A. III.

Hahnemann Medical College and Hospital of
Philadelphia. [DNLM: 1. Drug

therapy—Congresses. WB330 C643 1977]

RM262.C53 615'.5 78-18899

ISBN 0-8089-1080-9

© 1978 by Grune & Stratton, Inc.

All rights reserved. No part of this publication
may be reproduced or transmitted in any form
or by any means, electronic or mechanical,
including photocopy, recording, or any
information storage and retrieval system
without permission in writing from the
publisher.

Grune & Stratton, Inc.

111 Fifth Avenue

New York, New York 10003

Distributed in the United Kingdom by

Academic Press, Inc. (London) Ltd.

24/28 Oval Road, London NW 1

Library of Congress Catalog Number 78-18899

International Standard Book Number 0-8089-1080-9

Printed in the United States of America

Clinical Therapeutics

Acknowledgment

The editors acknowledge the secretarial assistance of Mrs. Janice Chancey and the organizational assistance of Mr. Robert Schaefer and his staff in the Department of Continuing Medical Education.

Foreword

The proliferation of information over the last several decades has emphasized the need for physicians to be *au courant* and to continue their education. The array of therapeutic agents and procedures available to modern physicians in the treatment of diseases has increased dramatically. Last year's "drug of choice" may be contraindicated, whereas new uses may be developed for an agent long discarded by practitioners.

Modern therapy changes rapidly, and approaches and evaluations of therapy are under constant scrutiny. It is urgent that physicians not only keep up-to-date but, more important, know how to use all agents—both old and new—properly, since the patient's well-being depends on the physician's knowledge of the benefits and dangers of the therapy. This applies to specialists as well as to generalists, particularly those whose patients are receiving multiple drug regimes for multisystem diseases.

The authors and editors of this book have brought together chapters on broad but pertinent modalities of treatment, complications, and interactions. Busy practitioners will find in these pages the answers to many of their therapeutic problems.

Joseph R. DiPalma, M.D., Ph.D.
Dean, Hahnemann Medical College and Hospital
Philadelphia, Pennsylvania

Preface

The vast majority of previous Hahnemann Symposia have dealt with the diagnosis of disease. This symposium was held because of the need for a timely, detailed update of major topical areas in clinical therapeutics.

This volume covers therapeutic areas in all subspecialties of medicine. Although careful clinical observations of response to therapy are stressed throughout, ample reference is made to the precise measurement of serum drug levels for interpreting effect and adversity. Clinical pharmacology thus incorporates an understanding of pharmacodynamics, pharmacokinetics, and laboratory medicine as adjunctive tools in gauging therapeutic response.

Because of the rapid advances in medical management and therapeutics, many experts worked together rapidly to produce this timely and practical book, written for the general internist and family physician. It also will be useful for the new health practitioners working with these physicians—physician assistants and nurse practitioners.

David T. Lowenthal, M.D.

David A. Major, M.D.

Contributors

- AFFRIME, MELTON B., PHARM. D., Senior Instructor of Pharmacology and Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- AGUS, ZALMAN S., M.D., Assistant Professor of Medicine, and Director, Stone Evaluation Center, Renal-Electrolyte Section, Department of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pa.
- BELLET, ROBERT E., M.D., Research Physician, The Fox Chase Cancer Center, Philadelphia, Pa.
- BLACK, MARTIN, M.D., Associate Professor of Medicine and Pharmacology, Head, Liver Unit, Director, Section of Clinical Pharmacology, Temple University School of Medicine, Philadelphia, Pa.
- BLECKER, DAVID L., M.D., Fellow, Division of Nephrology and Hypertension, and Clinical Instructor in Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- BREST, ALBERT N., M.D., James C. Wilson Professor of Medicine, and Director, Division of Cardiology, Jefferson Medical College, Philadelphia, Pa.
- BROWNEE, MICHAEL, M.D., Instructor in Medicine, Harvard Medical School and Peter Bent Brigham Hospital, Boston, Mass.
- BULOVA, STEPHEN, M.D., Associate Professor of Medicine, Division of Hematology and Oncology, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- CLEARFIELD, HARRIS R., M.D., Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- COODLEY, EUGENE L., M.D., Professor and Associate Chairman, Department of Medicine, and Director, Division of General Internal Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- DIGREGORIO, G. JOHN, Ph.D., Associate Professor of Pharmacology, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- DINOSO, VINCENTE P., JR., M.D., Associate Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- DÜSING, RAINER, M.D., Assistant Research Professor of Medicine, State University of New York at Buffalo, E.J. Meyer Memorial Hospital, Buffalo, N. Y.

- EHRLICH, GEORGE E., M.D., Professor of Medicine and Rehabilitation Medicine, Temple University School of Medicine, Philadelphia, Pa.
- FLEISCHMAJER, RAUL, M.D., Professor of Medicine, and Director, Division of Dermatology, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- GALINSKY, RAYMOND E., Pharm. D., Department of Pharmacy, Philadelphia College of Pharmacy and Science, Philadelphia, Pa.
- GELFAND, MICHAEL C., M.D., Assistant Professor of Clinical Medicine, and Co-Director, Dialysis and Transplantation Service, Georgetown University Hospital, Washington, D.C.
- HAMMER, GLENN S., M.D., Assistant Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- JOHNSTON, ROBERT F., M.D., Professor of Medicine, and Director, Division of Pulmonary Diseases, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- KAHN, SIGMUND BENHAM, M.D., Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- KESSLER, KENNETH M., M.D., Assistant Professor of Medicine, and Associate Director, Cardiac Catheterization Laboratory, Temple University Health Sciences Center, Philadelphia, Pa.
- KOTLER, MORRIS N., M.D., Director, Noninvasive Laboratory, The William Likoff Cardiovascular Institute, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- LAVINE, ROBERT L., M.D., Assistant Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- LEE, JAMES, M.D., Professor of Medicine, and Director, Hypertension Program, State University of New York, Buffalo, N.Y.
- LORBER, BENNETT, M.D., Associate Professor of Medicine and Microbiology, Temple University Health Sciences Center, Philadelphia, Pa.
- LOWENTHAL, DAVID T., M.D., Associate Professor of Medicine and Pharmacology, and Director, Clinical Pharmacology Unit, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- MAJOR, DAVID A., M.D., Professor of Medicine, and Associate Chairman for Education, Department of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- MASTRANGELO, MICHAEL J., M.D., Research Physician, Fox Chase Cancer Center, Philadelphia, Pa.
- MURTHY, S.N.S., Ph.D., Division of Gastroenterology, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- NICHOLAS, LESLIE, M.D., Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.

- ONESTI, GADDO, M.D., Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- OSLICK, THEODORE, M.D., Associate Professor of Medicine, and Medical Director, Department and School of Respiratory Therapy, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- PIRAINO, ANTHONY J., Ph.D., Senior Instructor of Pharmacology, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- PETROZZI, JOHN W., M.D., Assistant Professor of Clinical Dermatology, University of Pennsylvania, and Chief of Dermatology, Philadelphia Veterans Administration Hospital, Philadelphia, Pa.
- REIDENBERG, MARCUS M., M.D., Professor of Pharmacology and Associate Professor of Medicine, and Head, Division of Clinical Pharmacology, Cornell University Medical College, New York, N.Y.
- ROSE, LESLIE I., M.D., Professor of Medicine, and Director, Division of Endocrinology and Metabolism, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- ROSSINI, ALDO A., M.D., Assistant Professor of Medicine, Harvard Medical School, Peter Bent Brigham Hospital, and Elliot P. Joslin Research Laboratory, Boston, Mass.
- SCHWARTZ, ALLAN B., M.D., Professor of Medicine, Division of Nephrology, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- SCHWARTZ, ANDREW R., M.D., Associate Professor of Medicine and Microbiology, and Director, Division of Infectious Diseases, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- SEGAL, BERNARD L., M.D., Professor of Medicine, and Director, The William Likoff Cardiovascular Institute, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- SEVIN, BRADLEY H., M.D., Chief, Consultation-Liaison Service, Department of Mental Health Sciences, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- SUTNICK, ALTON I., M.D., Dean and Professor of Medicine, The Medical College of Pennsylvania, Philadelphia, Pa.
- SWARTZ, CHARLES, D., M.D., Professor of Medicine, Director, Division of Nephrology and Hypertension, and Vice-Chairman, Department of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.
- SWENSON, ROBERT M., M.D., Associate Professor of Medicine and Microbiology, and Head, Section of Infectious Diseases, Temple University Health Sciences Center, Philadelphia, Pa.
- WINKELMAN, A. CHARLES, M.D., Associate Professor of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pa.

WINCHESTER, JAMES F., M.B., Instructor in Medicine, Georgetown University Hospital, Washington, D.C.

YAFFE, SUMNER J., M.D. Professor of Pediatrics and Pharmacology, The University of Pennsylvania, and Director, Division of Clinical Pharmacology, The Children's Hospital of Philadelphia, Philadelphia, Pa.

ZARRO, VINCENT J., M.D., Ph.D., Associate Professor of Medicine and Pharmacology, and Director, Division of Rheumatology, Hahnemann Medical College and Hospital, Philadelphia, Pa.

Clinical Therapeutics

Contents

Acknowledgment
Foreword
Preface
Contributors

Part I.	Cardiovascular Clinical Pharmacology	
1.	Pathophysiology and Treatment of Hyperlipidemias <i>Raul Fleischmajer</i>	3
2.	Antiarrhythmic Drugs <i>Albert N. Brest</i>	15
3.	Digoxin versus Digitoxin: A Study in Comparative Clinical Pharmacology <i>Kenneth M. Kessler</i>	21
4.	The Management of Angina Pectoris with Nitrates and Propranolol <i>Bernard L. Segal and Morris N. Kotler</i>	37
Part II.	Renal Hypertensive Clinical Pharmacology	
5.	The Treatment of Hypertensive Encephalopathy <i>David T. Lowenthal and Melton B. Affrime</i>	49
6.	Therapeutic Interventions in Hypertension <i>Gaddo Onesti and David T. Lowenthal</i>	57
7.	The Medical Management of Chronic Renal Failure <i>David L. Blecker and Charles D. Swartz</i>	75
8.	Drug Therapy of Renal Calculi <i>Allan B. Schwartz</i>	85
9.	Individualization of Drug Therapy in Patients with Renal Disease <i>Marcus M. Reidenberg</i>	97

10.	The Role of Prostaglandins in Blood Pressure Regulation and Sodium and Water Homeostasis	103
	<i>Rainer Düsing and James B. Lee</i>	
Part III.	Endocrine—Metabolic Clinical Pharmacology	
11.	Management of Disorders of Calcium Metabolism	117
	<i>Zalman S. Agus</i>	
12.	Therapeutic Approach to Diabetic Complications	127
	<i>Michael Brownlee and Aldo A. Rossini</i>	
13.	Insulin Update	147
	<i>Robert L. Lavine</i>	
14.	Oral Hypoglycemic Agents	151
	<i>Robert L. Lavine</i>	
15.	Evaluation and Therapy of the Hirsute Female	159
	<i>Leslie I. Rose</i>	
Part IV.	Pulmonary Clinical Pharmacology	
16.	Treatment of Tuberculosis	171
	<i>Robert F. Johnston</i>	
17.	New Drugs for the Treatment of Asthma	183
	<i>Sumner J. Yaffe and Raymond E. Galinsky</i>	
18.	Drug-Induced Pulmonary Disease	191
	<i>Theodore Oslick</i>	
Part V.	Gastrointestinal Clinical Pharmacology	
19.	The Role of the Liver in Drug Metabolism	213
	<i>Martin Black</i>	
20.	Immunosuppressive Therapy in Gastroenterology	219
	<i>Harris R. Clearfield</i>	
21.	Pharmacologic Antagonists to Acid Secretion	225
	<i>Vicente P. Dinoso, Jr., and S.N.S. Murthy</i>	
22.	Prophylaxis and Prevention of Hepatitis	235
	<i>Alton I. Sutnick</i>	
Part VI.	Therapy for Disorders of Cellular Metabolism	
23.	The Biologic Clock in Cancer Chemotherapy	245
	<i>Sigmund Benham Kahn</i>	
24.	Drug-Induced Hemolysis	263
	<i>Stephen Bulova</i>	
25.	Antipsoriatic Drugs	273
	<i>John W. Petrozzi</i>	

26. Immunotherapy of Malignant Melanoma 281
Michael J. Mastrangelo and Robert E. Bellet

Part VII. Clinical Pharmacology of Infectious Diseases

27. Venereal Disease and Newer Aspects of Treatment 295
Leslie Nicholas
28. Therapy of Opportunistic Infections 305
Glenn S. Hammer
29. Clindamycin versus Chloramphenicol in Anaerobic Infections 311
Robert M. Swenson
30. What Is Adequate Therapy for Infective Endocarditis? 315
Andrew R. Schwartz

Part VIII. Rheumatologic Clinical Pharmacology

31. Uses for and Interactions of Corticosteroids in Rheumatology 331
George E. Ehrlich
32. Pharmacology of Gout 343
Vincent J. Zarro
33. Penetration of Antimicrobial Agents into Synovial Fluid: Is There a Blood-Joint Barrier? 347
Bennett Lorber

Part IX. Neurologic-Psychiatric Clinical Pharmacology

34. Drug Treatment of Extrapyrarnidal Disorders 357
A. Charles Winkelman
35. Diagnosis and Management of Stroke; The Use of Antithrombotics in Prevention of TIA 365
Eugene L. Coodley
36. Anticonvulsants and Drug Interactions 375
Melton B. Affrime and David T. Lowenthal
37. Antidepressants, Tranquilizers, and Sedative Hypnotics 385
Bradley H. Sevin
38. Treatment of Drug Addiction 391
G. John DiGregorio and Anthony J. Piraino
39. Current Treatment of Drug Overdose 397
Michael C. Gelfand and James F. Winchester

- Index 407

PART I

Cardiovascular Clinical Pharmacology

