



# Cardiovascular Pharmacotherapy

## A Point-of-Care Guide

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## **DEDICATION**

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To my amazing wife, *Candace*, and three wonderful children, *Jack*, *Julia*, and *Anna*, for their love, patience, and unconditional support of my professional endeavors

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Throughout the development of this first edition, I have been fortunate to work with a distinguished group of individuals. Anyone who has labored on a project of this magnitude realizes its success hinges on collaboration. I am indebted to the exceptional contributing authors and reviewers that worked to ensure each chapter represents the most up-to-date information. Moreover, I am grateful for the extensive guidance provided by the ASHP Publications staff, including Rebecca Olson (Acquisitions Editor), Dana Battaglia (Senior Editorial Project Manager), Johnna Hershey (Director, Production Center), and Rachel Alberts (Marketing Manager). Without the hard work of these talented individuals, this reference would not have come to fruition.

Likewise, I wish to acknowledge the numerous mentors that have guided me throughout my career. These individuals—too many to list—along with colleagues, trainees, and patients have inspired me to improve the care of those with cardiovascular disease. This book would not be possible without their encouragement and counsel.

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## **CONTENTS\***

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Acknowledgments -----	iii
Foreword -----	vi
Preface -----	vii
Online Content and Updates -----	viii
Contributors -----	ix
Reviewers -----	xi
<b>Chapter 1.</b> Cardiovascular Testing -----	1
<i>by Michael A. Crouch</i>	
<b>Chapter 2.</b> Drug-Induced Cardiac Disease -----	29
<i>by Kelly M. Summers and Kristin Watson</i>	
<b>Chapter 3.</b> Hypertension -----	63
<i>by Joseph J. Saseen</i>	
<b>Chapter 4.</b> Hypertensive Crisis -----	79
<i>by Kimberly L. Tackett and Michael A. Crouch</i>	
<b>Chapter 5.</b> Dyslipidemia -----	95
<i>by Barbara S. Wiggins</i>	
<b>Chapter 6.</b> Chronic Stable Angina -----	121
<i>by Robert J. DiDomenico and Larisa H. Cavallari</i>	
<b>Chapter 7.</b> Acute Coronary Syndrome -----	143
<i>by Paul P. Dobesh</i>	
<b>Chapter 8.</b> Chronic Heart Failure -----	169
<i>by Michael A. Crouch</i>	
<b>Chapter 9.</b> Acute Decompensated Heart Failure -----	187
<i>by Jo E. Rodgers</i>	

\*ALL CHAPTER REFERENCES ARE INCLUDED ONLINE AT [WWW.ASHP.ORG/CARDIOVASCULAR](http://WWW.ASHP.ORG/CARDIOVASCULAR).  
SEE PAGE VIII FOR MORE INFORMATION.





## **CONTENTS\* (continued)**

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<b>Chapter 10.</b> Cardiac Transplantation -----	207
<i>by Robert Lee Page II</i>	
<b>Chapter 11.</b> Atrial Arrhythmias -----	235
<i>by Amy L. Seybert and James C. Coons</i>	
<b>Chapter 12.</b> Ventricular Arrhythmias and Related Emergency Cardiovascular Care -----	259
<i>by Cynthia A. Sanoski</i>	
<b>Chapter 13.</b> Ischemic Stroke -----	283
<i>by Stacy A. Voils</i>	
<b>Chapter 14.</b> Peripheral Arterial Disease -----	303
<i>by Zachary A. Stacy</i>	
<b>Chapter 15.</b> Venous Thromboembolism -----	319
<i>by Toby C. Trujillo</i>	
<b>Chapter 16.</b> Valvular Heart Disease -----	345
<i>by Angie Veverka</i>	
<b>Chapter 17.</b> Pericarditis -----	371
<i>by Tien M.H. Ng</i>	
<b>Chapter 18.</b> Pulmonary Arterial Hypertension -----	391
<i>by William D. Cahoon, Jr.</i>	

### **APPENDICES**

Appendix A -----	409
Appendix B -----	412
Appendix C -----	415
Index -----	471

\*ALL CHAPTER REFERENCES ARE INCLUDED ONLINE AT [WWW.ASHP.ORG/CARDIOVASCULAR](http://WWW.ASHP.ORG/CARDIOVASCULAR).  
SEE PAGE VIII FOR MORE INFORMATION.





## FOREWORD

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As an educator who teaches pharmacy students both in the classroom and at the bedside, I often struggle with making sure students have the proper resources to answer cardiology pharmacotherapy questions accurately and with supporting details and rationale. In addition, “non-cardiology” colleagues or those starting off their career in cardiology pharmacy practice often ask me for up-to-date resources to assist them in understanding the rationale behind some cardiovascular drug therapy selections and patient management dilemmas. This new text, ASHP’s pocket-sized reference entitled *Cardiovascular Pharmacotherapy: A Point-of-Care Guide*, easily serves both roles. Each of the 18 book chapters uniquely summarizes a cardiovascular disease in a size that can be transported in a lab coat pocket. There are brief pathophysiology, clinical presentation, diagnosis, and risk stratification sections that give an appropriate background for the reader to understand the rationale for pharmacotherapy. Helpful disease-based tables are included; for example, the CHADS<sub>2</sub> score for the discussion on stroke risk in atrial fibrillation. Next, tables listing specific recommendations from current practice guidelines for each cardiovascular disease are included in chapters and both non-drug and drug therapy summarized. What makes this book stand out amongst others, however, is that the chapters are *not* written as in-depth reviews of clinical trials but rather as a practical approach applying those trials and guidelines. In addition to the “usual fare” of cardiovascular topics like hypertension, chronic heart failure, and arrhythmias, there are concise chapters written for a pharmacist audience that you simply cannot find elsewhere like pericarditis, valvular heart disease, pulmonary hypertension, and cardiac transplantation.

What does this book offer that a guideline or an on-line disease-based information resource cannot? It is the attention to details regarding drug therapy. Dr. Crouch and the chapter authors have put a tremendous effort into creating what I feel are the best cardiology drug tables currently available. There is specific information on drug doses, pharmacokinetics, and monitoring parameters for important agents for each cardiovascular disease. What does this book offer to the seasoned cardiology pharmacist practitioner? Each chapter has a valuable treatment algorithm that places the data into the context of practice. Each chapter has one or more clinical controversies that are explained and referenced at the depth needed for an experienced clinician but that can be easily understood by a pharmacy student. In short, the book’s title says it all. It is an affordable resource to students and clinicians alike that can be used at the *Point-of-Care*.

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September 2009



## PREFACE

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Colleagues, residents, and students have frequently asked me to recommend a handy yet comprehensive book related to cardiovascular pharmacotherapy. Although numerous quality textbooks are available for health care professions that, in one fashion or another, address cardiovascular disease, none sufficiently reviews the topic in a convenient manner designed for direct patient care. In 2007, ASHP Publications presented me with an opportunity to develop a unique reference to fulfill this unmet need.

*Cardiovascular Pharmacotherapy: A Point-of-Care Guide* aims to serve as a contemporary and easy-to-use reference for clinical pharmacists, other health care practitioners, residents, and students. Given the high incidence of heart disease within our society, the book's clinical applicability translates to both the inpatient and outpatient settings. The guide is designed to integrate basic disease and drug information in a way that is useful to didactic and experiential students, but it also provides sufficient detail to educate and challenge residents. Moreover, it incorporates guideline statements, recent literature, and clinical controversies in a way that informs even the most seasoned clinician.

The guide consists of 18 chapters authored by a variety of cardiovascular pharmacotherapy experts throughout the country. It begins with chapters on cardiovascular testing and drug-induced cardiac disease since this information is relevant throughout the book. Ensuing disease-focused chapters review cardiovascular risk factors and ailments commonly encountered by all clinicians, including hypertension, dyslipidemia, stable angina, and heart failure. Intermixed within these topics are chapters that tackle urgent conditions such as hypertensive crisis, acute coronary syndrome, acute heart failure, and ischemic stroke. Clinicians with a specialty practice such as those in the cardiology, emergency, and intensive care settings will find these sections of particular interest.

Disease-focused chapters follow a standard format allowing for quick retrieval of information. Each chapter begins with a review of the disease pathophysiology, clinical presentation, and diagnosis. Subsequent sections examine treatment principles, with a candid assessment of non-pharmacological and pharmacological considerations. Liberal use of tables and figures support each topic and offer unique treatment algorithms as well as selected guideline statements from the American Heart Association, the American College of Cardiology, and other authoritative sources. The final section of disease-focused chapters reviews monitoring considerations, clinical controversies, and potential future treatments.

The book concludes with the point-of-care drug information appendix, which allows readers to retrieve essential drug facts quickly for common cardiovascular agents. Distinctive features of this table include clear identification of high-risk drugs (e.g., black boxed warnings); a listing of generic, brand, and combination products; and emphasis on drug details necessary at the patient's bedside or in the clinic setting. Moreover, the table presents brief monitoring parameters that clinicians should consider in concert with specified warnings and precautions, common adverse drug events, and known interactions.





## **PREFACE (continued)**

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Inevitably, new research and guidelines will render certain aspects of this book less useful. For instance, revised hypertension and dyslipidemia guidelines will be available in the summer of 2010, according to the National Heart Lung and Blood Institute. Therefore, a website located at [www.ashp.org/cardiovascular](http://www.ashp.org/cardiovascular) supports the book and provides endless opportunities for the reader to access the most current cardiovascular disease and drug information. Please see the “Online Content and Updates” section that follows for further details on the website.

My hope is that you find this guide useful, irrespective of your discipline or current level of training. It is designed to be a straightforward reference suitable for students at any level, but it also addresses higher level issues relevant to advanced trainees and experienced clinicians. My ultimate goal is that this reference provides health care practitioners a tool that improves the care of patients with cardiovascular disease.

**Michael A. Crouch**, Pharm.D., FASHP, BCPS (AQ Cardiology)

## **ONLINE CONTENT AND UPDATES**

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A website located at [www.ashp.org/cardiovascular](http://www.ashp.org/cardiovascular) supports the book and provides regular updates regarding current research, guidelines, and drug information. Using a password, readers will have access to the following features:

- References for each chapter, including hyperlinks
- An exclusive newsletter, *Cardiovascular Pharmacotherapy Quarterly Report*, covering the most recent research and advances in the field
- Links to the latest guidelines—check in summer of 2010 for revised hypertension and dyslipidemia guidelines from the National Heart Lung and Blood Institute
- Shockwave presentations that review important cardiovascular drug classes
- Cardiovascular pharmacotherapy teaching resources
- Printable drug monographs for new cardiovascular drug approvals

***To access exclusive content, when prompted at the site, please enter either your ASHP number, or register as a new user to obtain your password.***





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