

Clinical Pharmacology of Sleep

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Foreword

From the emergence of clinical sleep medicine marked by the establishment of the harbinger Stanford Sleep Disorders Clinic in the mid 1970s, offspring sleep disorders clinics and centers have grown exponentially with the recognition of the unmet diagnostic and treatment needs of the reservoir of patients suffering from symptoms of what are now recognized and classified as the nosology of human sleep disorders. Important in the growing armamentarium of treatment options for the sleep practitioner are both traditional and newer pharmacological agents, including over-the-counter, non-traditional, and prescription types, that are all used to treat, sometimes adjunctively, most clinically recognized sleep disorders.

Although there are numerous academic treatises and reviews dealing with individual treatment alternatives for the diversity of recognized sleep disorders, no one comprehensive resource, extant, has dealt with pharmacological treatment options and strategies for the major human sleep disorders associated with a panoply of symptomatic conditions. The present volume and its series of chapters individually focusing on a range of human conditions, from pediatric sleep disorders to sleep-related disorders of individuals suffering from Alzheimer's dementia, uniquely cover the wide range of human medical conditions amenable to thoughtfully sleep-related applied drug therapy.

The Editors have brought together a superb group of internationally respected sleep clinicians, and researchers, that provide state-of-the-art analysis of the current basic and clinical perspective regarding the most common sleep disorders that are amenable to pharmacological treatment. In each chapter the authors outline a thorough historical background of the particular disorder and review the basic pre-clinical studies leading to current treatment options.

Readers can pick from chapters regarding clinical conditions for which they have particular interest or can quickly scan chapters to bring themselves up to date about the most current views regarding treatment options in a variety of human conditions with particular sleep-related symptomatology. Overlapping material occasionally occurs between various chapters but this poses no real concern as it is unlikely that individual readers will read straight through all the chapters, this being a review volume. Readers will have a tendency to pick and choose their clinical subject matter as it relates to their interest in specific conditions and their clinical pharmacology.

Clinical Pharmacology of Sleep is an important and timely monograph dealing with the second or third generation pharmacological treatment strategies available to the sleep disorders practitioner. Undoubtedly, these strategies will further evolve over

time with the development of more targeted pharmacological agents or combinations of drugs based on both preclinical and well as more controlled clinical trials and studies. Until then, this volume brings together the extant state-of-the-art information that will help sleep professionals as well as interested neuroscientists and, indeed, the lay public interested the evolving pharmacology of sleep and its disorders.

Steven Henriksen, PhD
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October, 2005

Preface

During the past decades, sleep research has seen enormous progress. Numerous discoveries have been described in a wealth of papers of ever increasing size and complexity. These publications have become difficult to follow not only because of their number, but also because they have been published specialty journals that are not easily accessible.

The clinical pharmacology of sleep is a fascinating field of medical science. Its subject matter touches all facets of our health and well being. Additionally it is becoming a highly interdisciplinary field. We have striven to present chapters, which hopefully will make the reader's experience both enjoyable as well as meaningful.

This book is intended primarily for sleep researchers, general- and neuropharmacologists, psychiatrists, and physicians who evaluate and treat sleep disorders. In addition, the volume will be useful to pharmacologists, pharmacists, medical students and clinicians of various disciplines who want to get an overall grasp of the clinical pharmacology of sleep.

This volume includes contributions from a wide range of authors, many of whom are world-recognized authorities in their field. Chapters in this volume deal with a range of topics, including, among others, the pharmacological treatment of insomnia, sleep disturbance in anxiety disorders, benzodiazepine and non-benzodiazepine hypnotics and their molecular pharmacology, rebound and withdrawal effects, and chronopharmacology and its implications for the pharmacology of sleep. A wide range of new drugs and pharmacological concepts are discussed in the volume. The reader may feel confident that the information presented is based on the most recent sleep pharmacology literature. Furthermore, the importance of this information to medicine and therapeutics is stressed.

This book will explore many of these new and exciting developments. Unfortunately, it is impossible in a book such as this to include all recent advances, but that is what makes Clinical pharmacology such an exciting field to explore.

It has been the intention of the editors to provide in this volume a comprehensive and up-to-date coverage of specialized topics in the clinical pharmacology of sleep. It is our hope that we have succeeded in accomplishing this goal.

The editors and authors would appreciate feedback on the contents of the book with particular regard to omissions and inaccuracies.

New York/Montevideo, July 2005

S.R. Pandi-Perumal
J.M. Monti

Credits and acknowledgements

An enterprise of this sort is bound to be contentious and challenging, and editors who attempt such things need all the help they can get. Several people were instrumental in the production of this new volume of *Clinical Pharmacology of Sleep*.

The dedicated staff of Birkhauser-Verlag, Basel, Switzerland made this project an especially pleasurable one. In particular we wish to acknowledge the invaluable help of Dr. Beatrice Menz, senior editor – Bioscience division, who supported from the start to finish and has provided simply an outstanding editorial management throughout this long process, and we are deeply in her debt.

We thank the team members for their dedicated efforts in helping us to complete our project in a timely manner and making editorial contributions, to whom we offer our hearty thanks. A very special debt of gratitude and appreciation is owed to the several reviewers who made numerous helpful suggestions. Their candid comments and insights were invaluable.

To all the people who contributed to this project, we want to say ‘thank you’. Their willingness to contribute their time and expertise made this work possible, and it is to them that the greatest thanks are due. They make our work possible and enjoyable.

Without a whole host of dedicated people, this volume would never have come to completion. All of the above experts made this book possible. We recognize them individually and collectively for their contribution.

Finally, on a personal note, the editors as individual would like to acknowledge the close co-operation we have received from each other. We think that we made a good team, even if we say it ourselves!

Last, but certainly not least, we owe everything to our wonderful wives and families. Without the love and support of our families and friends we could not have completed this project. They saw the work through from conception to completion with unwavering optimism and encouragement. You are the source of joy and inspiration for us – thank you for your continual support, and for understanding the realities of academic life!

Dedication

To our wives and families,
who are the reasons for any of our accomplishments
who have taught and aided us
In much of what we know and do

Two are better than one,
because they have a good reward for their labor.
For if they fall, one will lift up his companion,
but woe to him who is alone when he falls,
for he has no one to help him up.

– Ecclesiastes 4:9