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Pediatric Inflammatory Bowel Disease

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Library of Congress Control Number: 2007929784

ISBN-13: 978-0-387-73480-4 e-ISBN-13: 978-0-387-73481-1

Printed on acid-free paper.

9 8 7 6 5 4 3 2 1

springer.com

We dedicate this book...
To our families.

To Gordana-Dana, to Kay, and to Joanne. For their love, understanding and encouragement.
To Niko, to Jack, Leo, and Benjamin, and to Chris, Steven, and Julie.
For making us believe that the best is yet to come.

To our colleagues everywhere, past and present. For working hard each day to make a difference.

To our patients. For inspiring us.

Petar, Jon, Robert

Foreword

Pediatric Inflammatory Bowel Diseases (IBD) are the most common and most significant chronic disorders in Pediatric Gastroenterology. The onset of Crohn disease and ulcerative colitis in the first two decades of life presents a number of diagnostic and therapeutic challenges that are unique to pediatric patients. Although the studies available for pediatric diagnosis have improved dramatically in the past three decades, the improvement in technology alone cannot account for the increased frequency of IBD recognized in early childhood. While therapy for older patients has improved dramatically with the use of immunomodulators and the development of exciting biologic strategies, rarely if ever have comprehensive studies of the pharmacokinetics, safety and efficacy of any of the IBD medications been performed in pediatric patients. A number of excellent medications are not available in liquid preparations that can be swallowed by children, and others, such as timed-release formulations, are developed for delivery to an adult gastrointestinal tract. It is unfortunate that the care we provide to children is often an extrapolation of what is known about and available for adults with IBD.

Pediatric patients with IBD face a number of unique challenges. The onset of disease before puberty can be devastating. Growth failure is a particularly difficult problem with potentially permanent consequences. Much of the pediatric specific research has focused on the role of nutritional therapy to treat growth failure and induce remission. Strategies such as nocturnal nasogastric administration of supplements are widespread in most pediatric centers, and are surprisingly well-tolerated even by the youngest patients, particularly when the value of nutritional therapy is presented in advance to both the family and the child. Nutrition must be strongly advocated for pediatric patients, as it has great therapeutic value, and it is the only therapy for which there are no serious potential complications.

The long-term consequences of medical and surgical therapy are particularly troubling for pediatric patients. The complications of corticosteroids in childhood and adolescence can seem worse than the disease itself. While most of the cosmetic side effects are reversible, the psychological trauma to an adolescent can be overwhelming. We are only beginning to understand and address the long term consequences of therapy given at an early age. Bone mass accumulation and linear growth are critical processes that are age dependent, with peaks in early adolescence. Failure of therapy at this stage will have permanent, and possibly debilitating consequences. In order to spare cumulative steroid exposure there has been a marked shift in the last two decades to immunodulator therapies, often initiated in the first decade of life. More recently, biologic therapy has resulted in a dramatic shift in therapeutic armamentarium and the style of its administration. In adults, the “therapeutic pyramid” has been turned on all of its sides, with a resulting dramatic improvement in quality of life and a decrease in overall corticosteroid exposure, but with a new set of adverse events from therapy. While pediatric patients undoubtedly benefit from the adult data supporting these “bottom up” and “top down” strategies, the data in adults does not necessarily predict the optimal strategies for children. The effects of more “aggressive” therapy are being recognized for their positives and negatives, and the risks and benefits in pediatrics are undoubtedly different in children and adolescents. Whether it is the state of the immature immune

system, the effect of rapid growth, or the background susceptibility to different malignancies at different ages, the incidence of profound problems such as hepatosplenic T cell lymphomas reminds all practitioners that we do not understand the unique aspects of the younger patient that confer such increased susceptibility.

There is no better care than that given by a well educated and experienced practitioner who considers all aspects of a patient's problems. This book is designed for those practitioners who care for children. IBD therapy must be customized for each individual patient. There is no more ultimate "individual" patient that a child or adolescent with IBD. The many challenges of growth, nutrition, psychology and adaptation weigh heavily upon the profound challenges of pediatric Crohn disease and ulcerative colitis. In addition to the need for induction and maintenance of remission, the pediatric gastroenterologist must be obsessed with the long term consequences of therapy, not just a decade away, but hopefully a half century or more hence. Although these patients will move on to adult gastroenterologists, the problems will only accumulate and multiply. "Above all else, do no harm" is a wise admonition for pediatric IBD, where therapies are rapidly improving and there is a great potential for a cure of these devastating illnesses. This therapies and ultimate cures for Crohn disease and ulcerative colitis will come from the extraordinary advances in immunology and immunogenetics that are well detailed in this book. Until that time, we must rely on the conventional approached developed in adults, but with the conviction to verify their efficacy for children with IBD.

This book is a landmark step toward better understanding of pediatric IBD and the challenges of IBD therapy in children. The editors are highly respected clinical scientists who have each contributed substantially to the knowledge about pediatric IBD. In addition, their knowledge gained from their extensive clinical experience is reflected in this book. They have assembled a truly extraordinary group of authoritative leaders whose contributions to this volume will guarantee that this will be a reference for all who care for pediatric IBD. The book is a tribute to those authors, but is dedicated to the children and adolescents with Crohn disease and ulcerative colitis. It is a sign of the times that increased focus at every level is directed toward these children, and this book is one significant step along the road toward improving care for the hundreds of thousands of children with inflammatory bowel diseases. It should be required reading for all those who care for these children.

Preface

As this first edition of Pediatric Inflammatory Bowel Disease goes to press, we find ourselves reflecting not only upon our hopes and expectations for the textbook, but also upon the discipline of caring for children with inflammatory bowel disease (IBD). We have been saying amongst ourselves for several years that the time has come for a textbook dedicated to the unique aspects of pediatric IBD. This does not imply that the existing textbooks on IBD and pediatric gastroenterology are not useful. Rather, it is a testament that the collective knowledge about children and adolescents with IBD has grown, and continues to grow, to a point that warrants its own volume.

Despite its growth, the community of pediatric gastroenterologists remains a fairly intimate one. We were fortunate to have a highly talented and internationally renowned group of physician-scientists who shared our vision for this project and willingly contributed their time and effort to provide the chapters for the book. However, we also recognize that there remain many geographic regions where access to specialists trained to care for children with IBD is limited. To this end, we have tried to design this book as a resource for not just pediatric gastroenterologists, but also for general pediatricians, internists, family practitioners, and internist-gastroenterologists who will likely care for children or adolescents with IBD at some point in their practice. We also aimed to maintain the focus of this book on the pediatric aspects of IBD, rather than simply recapitulating the excellent general IBD textbooks already available. This was easier in some chapters than others, highlighting both the progress that has been made in studying IBD in children and also the need for further pediatric based studies. Also included is a unique section highlighting some topics such as advocacy, and transition of care from pediatric- to internist-gastroenterologists—areas where even experienced physicians may need guiding resources.

Pediatric IBD continues to grow as a discipline, and certainly many changes have occurred over the past few years. Our understanding of the immune system and its interplay with the environment and genetic susceptibilities has vastly improved providing us with further insight into the etiology and pathogenesis of the constellation of disorders that are defined by the term IBD. New approaches to treatment have been discovered, and new drugs developed. This textbook discusses these new approaches to treatment and aims at improving one's knowledge of the pathogenesis, epidemiology, diagnosis, and treatment of Pediatric IBD. We hope that our readers will profit by the collective experience, resulting in improved care for children afflicted by IBD.

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