LIVER DISEASE IN CHILDREN

Third Edition
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To my wife, Patty, and children, Kristin, Fred, Michael, and Peter, for their love, understanding, and support; to my parents for their love and support; and to Dr. William K. Schubert for his guidance, example as a leader in academic pediatrics, and for rousing my interest in the clinical and research aspects of pediatric hepatology. – FJS

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Liver Disease in Children has become the premier reference on pediatric liver disease. This third edition provides authoritative coverage of every aspect of liver disease affecting infants, children, and adolescents. This edition has been thoroughly revised and updated. In addition, it features new contributions on liver development, cholestatic and autoimmune disorders, fatty liver disease, and inborn errors of metabolism. The book offers an integrated approach to the science and clinical practice of pediatric hepatology and charts the substantial progress in understanding and treating these diseases. Chapters are written by international experts and address the unique pathophysiology, manifestations, and management of these disorders in the pediatric population.

In the six years since the publication of the second edition of Liver Disease in Children, pediatric hepatology has continued to evolve as a discipline. Our knowledge of the structural and functional development of the liver continues to grow, aided by sophisticated approaches in molecular biology. For example, the genetic basis of inherited cholestatic disorders has been further elucidated, and the clinician is now provided with useful information about the natural history, spectrum, and options for therapy. Investigators can couple this information with emerging science in their own laboratories. Several canalicular membrane transport proteins were actually discovered based upon their role in inherited disorders of cholestasis. These advances have allowed detailed studies regarding the behavior of these transporters in acquired cholestasis. New information has also come from microarray (gene chip) studies about the coordinate expression of regulatory genes that may differentiate the embryonic and perinatal forms of biliary atresia. These insights have led to a better animal model of the disorder that is helping to define further the immunopathogenesis of biliary atresia and develop targets for therapy. The spectrum of mitochondrial and fatty acid oxidation disorders has also expanded as a result of the continuing advances in molecular biology and molecular genetics.

The third edition of Liver Disease in Children also reflects the unexpected change in the incidence and spectrum of pediatric liver disease. For example, when the first edition was published in 1995, Reye’s syndrome was occasionally seen and still warranted detailed coverage in a separate chapter. This disorder has all but disappeared. Nonalcoholic fatty liver disease (NAFLD) associated with obesity was briefly covered but now is the most common cause of chronic liver disease in children and thus warrants a separate chapter in which the disorder is extensively reviewed. Fewer infants are now classified as having “idiopathic” neonatal hepatitis owing to improved imaging, advances in virology and immunology, and the application of sophisticated biochemical and molecular methods to the diagnosis of inherited disease. The entities that were dissected out of this “default” category are dealt with in discrete chapters.

We are proud of the efforts of all contributing authors and we thank them for their efforts. We believe that Liver Disease in Children, third edition, will be an essential reference for all physicians involved in the care of children with liver disease.

Frederick J. Suchy, M.D.
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The last decade has seen an explosion of activity in the clinical and research aspects of pediatric hepatology. The discipline has grown from a cataloging of the many unique disorders that can occur during infancy and childhood to a more profound understanding of the genetic, biochemical, and virologic basis for many pediatric liver diseases. The increasing availability of orthotopic liver transplantation in pediatric patients has contributed significantly to this renaissance in interest. More than ever before, the practitioner can offer therapies that can be curative, or at least improve the growth and development of children until transplantation is required. During the past 2 years, as this book was being planned and completed, many important advances have been made. For example, studies have demonstrated the potential beneficial effects of interferon treatment of chronic viral hepatitis in children. Novel therapies have also been developed for the treatment of children with hereditary tyrosinemia, several of the glycogenoses, some of the lysosomal storage disorders, and defects in bile acid metabolism. We are also at the dawn of efforts to selectively correct inborn errors of metabolism by somatic gene transfer into hepatocytes or the biliary tree. Increasingly, advances in the basic sciences are being incorporated directly into clinical practice of hepatology. As a result, clinicians must now view liver disease in ways not possible or even imagined by their predecessors.

The goal of this first edition of *Liver Disease in Children* is to both provide a framework to understand the pathophysiology of the various hepatobiliary disorders and offer authoritative analyses of the clinical and laboratory manifestations of specific diseases and the strategies for managing them. A number of superb texts exist in internal medicine that deal effectively with the mechanisms and manifestations of liver disease. In this text, there has been no attempt to duplicate the material that is available in these scholarly works. Rather those aspects of the structure and function of the developing liver are covered that are required to understand pathophysiology unique to children. It should be recognized that a diverse group of physicians is now involved in the care of children with acute and chronic liver diseases, including pediatric gastroenterologists, pediatricians with a particular interest in liver disease, pediatric surgeons, transplant surgeons, and transplant physicians who have a background primarily in internal medicine. Therefore, there is a need for a text that provides comprehensive coverage of the pathophysiology, diagnosis, and treatment of hepatobiliary disease in pediatric patients.

This book offers an integrated approach to the science, technology, and clinical practice of pediatric hepatology. Each chapter is written by an authority or authorities who are often actively engaged in advancing the field of knowledge in the subject matter. Each has been asked to deal with the topic comprehensively and to highlight areas of uncertainty and controversy in the field. Overall, it is hoped that this text will be a valuable resource to clinicians at various stages of their training and those in the multiple disciplines that now contribute to the diagnosis and treatment of hepatobiliary disease in children.

*Frederick J. Suchy, M.D.*