Neonatal Hematology

Pathogenesis, Diagnosis, and Management of Hematologic Problems

Second edition
Neonatal Hematology
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Second Edition

Edited by

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Foreword

Neonatal Hematology

ad omnes qui curare aut cura de natum infans.*

We are presently into our fifth generation of pediatric hematologists here in the United States. As Dr. Howard Pearson notes in his historical review of the evolution of neonatal hematology (Chapter 1), the discipline of pediatric hematology began to differentiate itself from that of internal medicine in a codified way during the decade or two preceding World War II. Prior to that, discoveries related to hematologic diseases of the newborn were largely the domain of “adult” hematologists and a few hematopathologists who had developed special interest in the blood problems of the young. Throughout much of this early period, those starting their careers in pediatric hematology had little in the way of textbooks from which to learn, the first being that of Dr. Carl Smith and his Blood Disorders of Infancy and Childhood, initially published in 1960. As comprehensive as this text was, it did not have an extensive focus on the neonatal period. That focus came with the publication of Frank Oski’s and Lawrence Naiman’s Hematologic Problems of the Newborn in 1966 with updated editions in 1972 and 1982. To the third generation of pediatric hematologists, this writer included, Hematologic Problems of the Newborn, as abbreviated as it was (fewer than 400 pages), became the bible of those participating in the care of newborns with hematologic disorders. As this work’s dedication indicated, it was written “to all of those who care for or care about the newborn infant.”*

While many texts in subsequent years have covered the wide scope of the discipline of pediatric hematology, few have taken a sharp focus and a truly deep dive into the hematologic disorders confronting the newborn, at least not until the publication of Neonatal Hematology in 2005, so well updated now by de Alarcón, Werner and Christensen with dozens of contributors. In the interval between the last edition of Oski’s and Naiman’s work and the publication of this second edition of Neonatal Hematology, the body of knowledge encompassing the hematology of the newborn has literally exploded. Thirty years ago there was little written of the workings of the immune system and its interactions with hematopoiesis. Only the basics of modern coagulation were well understood at that time. Transplantation medicine and studies of the interaction between the fetus and the mother were rudimentary at best. This edition of Neonatal Hematology will serve as the new bible for hematologists and neonatologists alike when dealing with current concepts of blood disorders of the newborn.

Few publishers have the resources to update a comprehensive text in as few as eight years as is true of this work. The editors, contributors and Cambridge University Press are to be congratulated for having accepted the challenge of doing so.

James A. Stockman III, MD
President and CEO
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The care of the newborn unlike other areas of medicine affects the care of a changing and expanding patient population. Advances in medicine have made it possible for very small infants to be able to survive and have productive lives, but the challenge for neonatologists caring for these small infants, is ever greater. This edition of our book is intended to serve as a reference for neonatologists regarding hematologic problems of the newborn. It is intended to be a practical guide, a "how to book" yet provide the scientific bases and understanding of the problems when possible so that we can make decisions based on evidence. We have assembled a group of authors both neonatologist and hematologist that have made hematologic problems of the newborn their focus and passion as well as physicians expert in neurology, oncology, immunology, infectious diseases and transfusion medicine. Our mentors Gerald Rothstein and Frank Oski helped us develop a passion for the field of neonatal hematology. Dr. J. Lawrence Naiman who co-edited the book Hematological Problems in the Newborn with Dr. Oski has been an inspiration for us and always helpful with editorial comments and support throughout the previous edition and the current one. We have divided the book into sections of developmental hematology that provides the understanding of the physiology of blood, red cell, platelet, leukocyte, immune, and hemostatic disorders and a miscellaneous section including transfusion therapy, oncology, fetomaternal interaction and reference values for the newborn. We hope this makes the book easy to use and practical. We are fortunate to have assembled a group of experts in the field that have contributed to the knowledge of neonatal hematology. We thank them and their families for the time they have devoted to the production of this book and their patience with the three of us and innumerable emails. We are thankful to Dr. James A. Stockman, III for writing the forward to this edition, his advice and mentorship throughout the years. Lastly we would like to thank our families whose activities have been limited by our efforts to write this book specially our wives (Wendy, Alice and Jill) our children, their partners and our grandchildren (Alessandro and Katie, Tessa and Travis, Lucas, Audrey, Jacob, Abby, Andrew, and Henry, Elsa, Ansel, Louisa, Atticus, and Cosette) without their understanding we could never had completed this text.