A Practical Handbook on Pediatric Cardiac Intensive Care Therapy

Dietrich Klauwer, Christoph Neuhaeuser, Josef Thul, Rainer Zimmermann (Editors).
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A Practical Handbook on Pediatric Cardiac Intensive Care Therapy, edited by Klauwer, Neuhaeuser, Thul, and Zimmermann, is the first English-language edition of this German handbook. Its content provides a comprehensive clinical resource for medical practitioners from various disciplines in the pediatric cardiac intensive care setting. Based on the knowledge and experience from one of the leading pediatric cardiac centers in Germany, this handbook aims to provide learners and advanced-care physicians (e.g., pediatric intensivists, cardiologists, anesthesiologists) with knowledge of how to better manage common congenital heart diseases and complex physiologic problems encountered in the pediatric cardiac intensive care unit (CICU). It provides a detailed approach of how to recognize, manage, and apply theoretical knowledge and advanced physiologic care of cardiac defects to improve pediatric outcomes in the acute setting. This handbook is also an excellent resource for practitioners managing general and complex physiologic situations, thereby optimizing care in an ever-changing world of medical advances, technologies, and interventions encountered in pediatric CICUs on a routine basis.

The valuable aspects of this practical handbook include its particular content, combining general and pediatric cardiac physiology and pathophysiology with expertise on management during various stages of care. It commences by providing the reader with an overview of the content layout, description of sections, and organization of topics for an easy-to-follow resource than can be navigated with ease for bedside diagnostics, decision-making, and treatment. It is divided into two primary sections: Part I General Considerations on Pediatric Cardiac Intensive Care Medicine and Part II Management of Specific Pediatric Cardiac Problems. Within each section, several chapters address a broad range of strategies for managing organ systems' dysfunction, monitoring, and drug therapy.

Part I covers the general considerations for neonatal and pediatric cardiac care. It addresses each aspect, providing the reader with the ability to comprehend and apply principles for acid-base disorders, ventilation, cardiovascular monitoring, renal pathophysiology, sedation, antibiotic therapy, management of coagulation and anticoagulation, pulmonary hypertension, extracorporeal life support, arrhythmias, resuscitation, fluid therapy, electrolyte disorders, and nutrition. Part II covers special pediatric and common cardiac problems. It addresses hemodynamic optimization, the role of diagnostics, management of heart defects, heart transplant, and pediatric cardiac surgery. There is also a chapter on commonly administered drugs. Individual chapters are highly focused on basic underlying principles of physiology, attempting to relate them to relevant management issues with a detailed approach to care and intervention strategies. For example, in the acid-base chapter (Part I), the authors effectively provide a synopsis of the pathophysiology of metabolic acidosis,

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followed by practical considerations as to its causes and various diagnostic approaches to determine the most likely etiology.

Basic and advanced knowledge is presented in an organized and succinct manner with coloured charts, pictures, and detailed explanations of formulas to guide the reader through each subject being discussed. For example, when a formula or clinical equation is being discussed in the text, it is followed by a more detailed explanation of how to apply the approach being described and working through the concepts in question. The methods of presentation for each topic, using clinical scenarios, detailed tables, figures, and relevant equations enhances knowledge retention and clinical understanding. Clinical issues commonly dealt with in daily practice (including postoperatively), such as hemodynamics, acid-base balance, hypoxia, and hypercapnia, are presented as clinical scenarios with caveats and strategies to assist in diagnosing and treating these conditions based on physiologic principles and formulas.

The authors clearly have a strong understanding of advanced physiology and the principles underlying critical care management, and they have clearly incorporated up-to-date clinical evidence throughout each section. One of the most valuable features of this handbook is the last chapter, which includes an alphabetized drug formulary

table with 111 commonly used medications. The detailed table provides quick access to each drug's mechanisms of action, indications, interactions, and dosing in a practical, easy-to-follow format.

Overall, this first English-language version of *A Practical Handbook on Pediatric Cardiac Intensive Care Therapy* is recommended to health professionals with a strong interest in mastering the underlying principles that affect pediatric cardiac critical care management. The handbook could serve as an excellent resource for pediatric residents, fellows, and staff. It provides a substantial means of enhancing clinical knowledge and a detailed approach of how to recognize and manage a vast variety of cardiac and congenital diseases. It covers a broad range of relevant considerations and commonly encountered cardiac problems in the pediatric CICU and is a useful guide for both trainees and experienced clinicians to gain and apply a better understanding of critical care physiologic principles, management, and interventional treatments.

Conflicts of interest None declared.

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