Acute Blood Purification
Contributions to Nephrology

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Acute Blood Purification

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Recently, it has become well known that the kidney plays the vital role of water-electrolyte regulation in critically ill patients. Various cytokines are involved in the pathophysiological process of acute organ damage and subsequently multiple organ failure. These overwhelming cytokines are not eliminated even with the kidneys functioning at their maximum capacity.

To prevent these catastrophic events, an innovative concept of acute blood purification has been developed in Japan. However, few physicians working in the field of critical care medicine in the world understand and apply this approach and technology to patients suffering from severe organ damage. This book describes the present status of acute blood purification in Japan. It is hoped that readers will come to understand the concept of elimination of cytokines in patients with septic shock in which cytokine storms produce serious organ damage, and the application of the technology of hemodiafiltration for elimination of cytokines. After considering the concept and technology, we will discuss how to construct the system of acute blood purification which includes various machines, devices, membranes, fluids and so on. In addition to these special aspects of acute blood purification, as the tool for the standard care of many critically ill patients with severe acute kidney injury, the role of continuous renal replacement therapy is discussed by leading experts in this field.

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