

*Michael J. Avram, Ph.D., Editor*

**Dynamic and Static Parameters of Fluid Responsiveness, Volume 48, Number 1.** Edited by Balachundhar Subramanian, M.B.B.S., M.D., M.P.H., and Kyung W. Park, M.D. Philadelphia, International Anesthesiology Clinics-Lippincott Williams and Wilkins, Winter 2010. Pages: 128. Price: \$162.00.

Fluid management in perioperative and critically<sup>1</sup> ill patients remains a highly debated topic. There is a wide variety of practice, even within institutions, and, if you think of fluid as a drug, it is unique in that even the most junior member of the team can double or triple the dose without fear of comment by other members of the team. In recent years, there has been a renewed interest in the assessment of fluid responsiveness in critically ill patients to identify those patients for whom fluid therapy will be of benefit and, equally importantly, those for whom it will not. This interest has been driven by the emergence of a number of exciting new technologies. *Dynamic and Static Parameters of Fluid Responsiveness* reviews these technologies and increases the reader's understanding of the important concept of dynamic fluid responsiveness.

The book is well organized into eight original articles. The first article illustrates the limitations of traditional static parameters of fluid responsiveness, such as central venous pressure, and outlines the physiologic concepts related to fluid loading. This leads to the next article that discusses the physiology behind dynamic fluid responsiveness and outlines the different technologies available to illustrate and use this approach in routine clinical practice. In many ways, these first two articles are the key to the book, providing the background information necessary to understand the subject. They are very well written and easy to understand, yet provide sufficient information to be recommended reading for both novice and expert.

The next five articles look, in turn, at the different technologies available to monitor fluid responsiveness. The discussion of each device includes technical considerations behind how the device works as well as a detailed review of the evidence base for the technology. The text is necessarily detailed at times because the authors seek to provide the reader with a thorough understanding of the different systems available. The article on echocardiography was a useful inclusion and suitably brief because this technology is not widely used to predict fluid responsiveness, although it may have more of a role in the future as its use expands into noncardiac surgery. We particularly recommend the article on the FloTrac System (Edwards Life Science, Irvine, CA), which expertly reviews the device, particularly in relation to the different versions available, because the company has sought to improve its performance. The PiCCO (Pulsion Medical System AG, Munich,

Germany) Monitor is also very well reviewed, although this technology is not yet widely available in the United States.

We would have liked to see more information about the LiDCO system (Covidien, Mansfield, MA), particularly with respect to the newer LiDCO rapid device that was only briefly mentioned, despite its widespread use. There was also insufficient discussion of the use of stroke volume variation, as opposed to accurate cardiac output measurement with this system. The use of a noncalibrated device to trend cardiac output and optimize fluid status perioperatively during major surgery is, in our opinion, quite different compared with needing more precise cardiac output values in a critically ill patient. We also believe the editors could have included a separate article to review the esophageal Doppler monitor. As mentioned in the final article, the esophageal Doppler monitor has more outcome data for perioperative goal-directed fluid management than any other monitor. It can also be used to assess the corrected flow time, or duration of flow during systole, as a measure of preload.

Using plethysmography to assess dynamic preload responsiveness is an emerging area and is expertly covered, with respect to both the possibilities and the limitations of these new devices. Finally, the last article summarizes the outcome data from randomized controlled trials involving restrictive or goal-directed fluid strategies. It is noteworthy that the limitations of nomenclature and fixed-volume amounts in the restrictive literature, as well as the confusion surrounding the third space, are well reviewed.

Overall, the book offers a good and thorough review of the subject, with the caveats mentioned above. We are delighted to see an increasing interest and more publications devoted to this important subject, with the hope that the increasing body of evidence behind dynamic fluid responsiveness can be translated into a widespread change in practice. We would recommend this book to anyone with an interest in this important subject, and it would be a useful addition to any anesthesia or critical care departmental library.

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**Anesthesiologist's Manual of Surgical Procedures, 4th Edition.** Edited by Richard A. Jaffe, M.D., Ph.D., and Stanley I. Samuels, M.D. Philadelphia, Lippincott Williams & Wilkins, 2009. Pages: 1,408. Price: \$169.

I imagine that auto mechanics have it tough these days. Merely decades ago, all engines were alike and just a few repairs were routinely made. Knowing how to change the spark plugs or flush