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BOOK AND NEW MEDIA REVIEWS

Reducing Mortality in the Perioperative Period, Second Edition

Giovanni Landoni, Laura Ruggeri, Alberto Zangrillo **(Eds). Springer, 2016, 158 pages. ISBN 9783319466965**

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Traditionally, clinical practice guidelines are largely established based on expert opinion rather than sound scientific evidence. Preferably, such evidence should come from well-designed, adequately powered clinical trials and meta-analyses. Although an increasing body of high-quality clinical research has been published in the field of perioperative medicine over the last decade, guidelines have been relatively slow to integrate this evidence into the clinical setting.

A new, web-based, democratic consensus process was used for this second edition of *Reducing Mortality in the Perioperative Period*. In total, 500 physicians from 61 countries were invited to give their opinions on a number of selected interventions that are thought to influence mortality during the perioperative period. The interventions had been preselected using an extensive systematic review. This model has previously been described and successfully implemented by authors from the same research group. The process consists of five steps: (1) eligible articles are identified, followed by (2) a web-based poll, (3) a consensus meeting, (4) a second web-based poll, and finally (5) definitive analysis.

This book is an update of a similar consensus process carried out during 2011–2012. For the first edition, 14 topics had been identified during an extensive literature search. For this second edition, three of the original topics were excluded and two new topics introduced, for a total of 13 topics in this edition. Among them, 11 focus on interventions that are believed to reduce perioperative mortality, and the other two address factors that may negatively influence mortality.

The book starts with two introductory chapters that clearly explain the rationale of the consensus process, and how it was carried out. In the 13 chapters that follow, each of the selected topics is extensively described. These chapters are followed by chapters on two topics that were included in the first web poll but excluded in the second.

Each of the 13 "topic chapters" starts with an introduction, followed by a description of the available evidence – when possible divided by the type of surgery used – and finishes with a conclusion and a summary table.

The following interventions, believed to reduce perioperative mortality, are included: perioperative glycemic control, postoperative non-invasive ventilation, use of levosimendan during cardiac surgery, leukocyte-depleted red blood cell transfusion, preoperative use of an intra-aortic balloon pump in patients undergoing high-risk coronary artery bypass graft (CABG), cardioprotective effects of volatile anesthetic agents, use of tranexamic acid during CABG, neuraxial anesthesia, remote ischemic preconditioning, and selective digestive tract decontamination. Two interventions identified as possibly increasing the risk of mortality are β-blocker therapy and the use of aprotinin during CABG. Two additional chapters cover the use of perioperative statins (excluded from the guidelines because of new conflicting evidence) and liberal versus restrictive perioperative blood transfusion strategies (excluded because of lack of consensus).

The body of evidence on these "hot topics" in perioperative medicine could change over time as a result of newly published research. This fact is acknowledged by the authors in the final two chapters. The second to last

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chapter contains an update of the most recent literature, published after the consensus meeting in 2015 (i.e., the third step in their demographic consensus process outlined above), which could have changed the opinions on several of the topics discussed in this book. Including the most recent evidence is a valuable addition to this book, although it would have been more logical to include the new information in the respective chapters.

The topics are thoroughly reviewed and accompanied by numerous references to the relevant literature. The authors are to be commended on the fact that, despite being so comprehensive, the book is still easy to read and understand. It provides an update on important perioperative topics and gives clinicians useful tools with which to incorporate this evidence into their clinical practice.

There are some limitations worth mentioning. First, the fact that only interventions with a positive effect on mortality were included could leave the reader with the impression that there may be some missing evidence from studies with negative results. Particularly, there is evidence from well-designed studies that certain interventions – such as use of clonidine during non-cardiac surgery or corticosteroids during cardiac surgery – do not importantly affect perioperative mortality. Also, some topics included in the book, although important, have not been shown to affect mortality – they affect only non-mortality endpoints (e.g., β-blockers, aprotinin). Furthermore, some of the topics – e.g., antifibrinolytic use during cardiac surgery – might have been better combined in one unifying chapter. In addition, Chapter 12, in which there is much mechanistic detail included about insulin therapy, seems a bit misplaced in this book. Lastly, some of the more technical work on these pages could arguably have been done better. For example, the layout of many of the tables is not intuitive, and the quality of the English grammar varies among the chapters.

In conclusion, *Reducing Mortality in the Perioperative Period, Second Edition* provides an easy to read, complete, up-to-date summary of interventions that influence perioperative mortality. This book can be recommended to every perioperative physician who needs a comprehensive, quick overview of current evidence-based interventions in perioperative medicine.

Conflicts of interest None declared.

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