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Editorial **Open Access**

Before, Between, and Beyond: Innovation across the Perioperative Phase

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Introducing the Founding Editor-in-Chief

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Anesthesia and surgery used to be described as transient interventions, yet it is becoming clear that their impact may persist longer than we have habitually assumed[1-3], and much of what determines recovery is decided days before and days after. Hence the concept of "perioperative medicine" arises.

Perioperative medicine is a meeting point of multiple disciplines, with anesthesiology lying at the center, and surgery, critical care, nursing, pharmacology, pathophysiology, molecular biology and biomedical engineering each contributing a strand to the same thread. Initially, our goal was merely to induce anesthesia and make surgery possible.[4] Then our responsibilities grew over time: to protect the function of vital organs, to ameliorate the stress response, and to keep the patient safe.[4] Thus perioperative medicine is expanding rapidly in every dimension. Its temporal frames are widening: from the preoperative consultation to outcomes assessed many months afterwards. Its disciplinary contents are being enriched: from anesthesia to critical care, then to the management of major chronic disease and the response to public health emergencies.[4] Its very objects are growing: the techniques of perioperative medicine are now being applied to patients outside of an operating room.[4] As we realize that the perioperative window is where the largest gains remain available, perioperative medicine has become THE discipline for this window.

The most visible trend in perioperative research concerns how we estimate risk. For years we leaned upon simple instruments such as the Revised Cardiac Risk Index (RCRI) and applied them to all patients with rather more confidence than the evidence warranted. However, a patient without recognized risk factors is not thereby a patient without risk.[1] The emergence of artificial intelligence (AI) has greatly accelerated our pace in this field. Imaging data that used to be too complicated to interpret can now be easily quantified, and their prognostic value fully realized. Calcium burden on an ordinary chest CT, for instance, now informs cardiac risk after noncardiac surgery.[3,5] AI-assisted, disease-specific prognostic tools have been developed and, in some cases, formally

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endorsed.[3] The shift indicates that we are moving from scoring a patient to developing individualized profiles that enable precision treatment.

A second trend lies in drug repurposing and reassessment. Treatments once regarded as gold-standard have been revised.[6] Consensus statements have repeatedly recalibrated what should be continued and what should be withheld.[1,5] For instance, large trials of perioperative renin-angiotensin system inhibition have yielded results that vary across patients, with findings pointing in different directions, so that the same decision now turns upon a preoperative biomarker rather than upon a rule.[2] At the same time, technology is altering what can be known: closed-loop drug delivery, portable and wearable monitoring, and robotic-assisted techniques have expanded the resolution at which perioperative care can be conducted.[3,4] The clinician is left with fewer rules and more judgment, which is exactly where evidence turns into practice.

The third trend concerns where the perioperative period ends. A generation of outcome research has made it clear that the perioperative period does not end at discharge. Delirium in older patients has been linked not merely to a longer stay but to a steeper trajectory of cognitive decline over the years that follow.[5] Renal injury has been shown to evolve across months rather than days.[2,3] The timing of postoperative myocardial injury appears to carry information about the patient's subsequent function, not merely about survival.[3] The boundaries that once separated the operating room from the clinic, and the clinic from the patient's daily life, are turning from administrative to scientific ones.

It is a sign of a field's maturity that it can state its own questions. In 2025, the Chinese Journal of Anesthesiology convened a task force to present ten scientific challenges in anesthesiology and perioperative medicine against explicit criteria.[4] The resulting agenda runs from the mechanism of general anesthesia, through pain and its relief, perioperative brain health, organ protection and long-term outcome, intelligent medicine, stress and immunity, and translational medicine, to the anesthesiology of chronic disease and of public health emergencies.[4] It has been adopted as a national research priority, with perioperative brain health among the designated fields.[4] These questions are closely tied to the daily work of researchers in anesthesiology and perioperative medicine, and have stirred immense enthusiasm for innovative research in the field.

It is against this background that we founded the *Journal of Perioperative Innovation* (JPI). Evidence travels poorly between disciplines and reaches the patient only slowly, if at all. This body of evidence spans basic and clinical research, which are usually viewed as two enterprises: one emphasizes molecular and cellular mechanisms tested in experimental models, the other focuses on clinical phenomena and the rigorous appraisal of generated evidence. However, the two form a loop much as a Möbius strip, which appears to have two sides that actually join as one. Yet the path along it is long. A revision in the timing of surgery, a reclassification of a drug, a refinement of a risk score: each of these becomes actionable long before it becomes conventional. Between a discovery and a change in practice there is a latency, and that latency is something a journal can shorten. JPI exists for that latency.

JPI is an international, open-access journal rooted in China and serving the global community. We aim to publish, promptly and rigorously, work of clinical or translational consequence. Our scope follows the perioperative arc and is organized into five domains: anesthesia and pain management; perioperative therapy and critical care; enhanced recovery and outcome modulation; artificial intelligence and medical-engineering integration; and perioperative organ injury and protection. We particularly encourage interdisciplinary collaboration across basic science, clinical practice and medical engineering. All manuscripts undergo rigorous double-blind peer review. We invite colleagues worldwide to submit their work and help shorten the distance between a finding and the patient it might help. The road to founding a journal is long, yet those who persist in walking it shall reach their destination.

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