EDITORIAL

Recent Advances and Future Directions in Perioperative and Chronic Pain Management – A Perspective from Bangladesh

Lutful Aziz

DOI:https://doi.org/10.62848/bjpain.v4i2.9594

Received: 23 September 2024
Accepted: 11 November 2024

The past decade has witnessed significant advances in perioperative, acute, and chronic pain management, profoundly impacting surgical outcomes, patient recovery, and societal burden. The integration of multimodal analgesic techniques, enhanced recovery after surgery (ERAS) protocols, innovative chronic pain interventions, and advancements in pharmacology and drug delivery systems has redefined standards of care, creating avenues for improved patient outcomes and cost efficiency.

Recent advancements in perioperative pain management have been transformative, particularly the application of ultrasound-guided (USG) regional anesthesia techniques and multimodal analgesia. Ultrasound-guided regional anesthesia allows for real-time visualization of nerves, muscles, and vascular structures, enabling precise needle placement and local anesthetic delivery. This precision significantly enhances block success rates and reduces the risk of complications such as inadvertent nerve injury, vascular puncture, and local anesthetic systemic toxicity (LAST). For example, USG-guided nerve blocks like erector spinae plane block, brachial plexus block, IPACK, and genicular nerve blocks have substantially improved perioperative outcomes by providing superior analgesia, reduced opioid requirements, and faster mobilization, thereby shortening hospital stays and accelerating recovery[1,2].

Pharmacological advancements, including sustained-release formulations, liposomal drug delivery systems, and transdermal patches, have optimized drug efficacy, improved patient compliance, and minimized side effects. Epidural analgesia remains a cornerstone of effective pain management, particularly in major surgical procedures. It provides superior analgesia, reduces systemic opioid use, improves pulmonary function, and accelerates postoperative recovery, directly contributing to reduced morbidity and shorter hospital stays.

An essential yet significantly underserved area in Bangladesh is labour analgesia utilizing epidural techniques. Despite its proven efficacy and safety in reducing maternal pain and improving maternal satisfaction during childbirth, labour epidural analgesia remains underutilized due to inadequate awareness, limited trained personnel, and resource constraints. Emphasizing the importance of labour analgesia is vital to enhancing maternal and neonatal outcomes, reducing childbirth-associated anxiety, and improving overall maternal healthcare quality.

Senior consultant
Anaesthesia and Pain Medicine,
Evercare Hospital Dhaka
President
Bangladesh Society of Regional Anaesthesia

Correspondence
Lutful Aziz
lutful.aziz@evercarebd.com

Implementation of ERAS protocols has markedly changed surgical outcomes, enabling faster recovery, reduced hospital stays, and decreased morbidity. Studies have consistently demonstrated that multimodal analgesia as part of ERAS protocols substantially reduces hospital length-of-stay by approximately 30-50% and cuts postoperative complications by nearly 40%[3]. Such advancements not only enhance patient comfort but also significantly decrease healthcare expenditures, illustrating the economic benefits of optimized perioperative care.

Parallel advancements in chronic pain management include minimally invasive procedures, neuromodulation techniques, and targeted pharmacotherapy. The evolution of radiofrequency ablation, spinal cord stimulation, and newer biological agents, such as calcitonin gene-related peptide (CGRP) antagonists for chronic migraines has provided substantial relief for patients previously considered refractory[4]. These interventions have not only enhanced quality of life but also reduced the chronic disability associated with unmanaged chronic pain, which previously contributed significantly to societal morbidity and economic burden.

The positive impact of improved pain management strategies extends far beyond individual patient benefits. Chronic pain affects approximately 20% of adults globally and significantly reduces productivity, increases disability, and escalates healthcare costs[5]. Advanced pain management techniques reduce reliance on systemic analgesics, minimize long-term disability, and lower healthcare utilization rates, translating to substantial societal and economic advantages.

However, despite these advances, significant challenges persist in Bangladesh, including inadequate training, limited resources, and insufficient public awareness regarding effective pain management modalities. Many healthcare facilities in Bangladesh lack specialized pain clinics and trained pain physicians. Additionally, ultrasound machines, essential for contemporary regional anesthesia practices, are not ubiquitously available, limiting the application of advanced pain management techniques.

For meaningful progress in Bangladesh, a multipronged approach is necessary. Enhanced training programs focusing on regional anesthesia, acute and chronic pain management, and labour analgesia techniques, increased investment in healthcare infrastructure, and broader public health initiatives promoting awareness of pain management options are crucial. Collaboration with international pain societies and institutions can facilitate knowledge transfer, improving clinical standards and patient outcomes in Bangladesh.

In conclusion, continuous advancement in perioperative, acute and chronic pain management techniques represents an opportunity to improve patient care and reduce healthcare costs significantly. To capitalize on these advancements, anesthesiologists and pain physicians in Bangladesh must adopt proactive strategies focused on training, resource allocation, and international collaboration. By addressing these barriers, Bangladesh can significantly improve the quality of life for its patients, reduce morbidity, and alleviate the considerable economic burden of pain management on society.

References

1 Wang F, Wu J, Wu Y, Han X, Dai H, Chen Q. Different peripheral nerve blocks for patients undergoing total knee arthroplasty: a network meta-analysis of randomized controlled trials. Arch Orthop Trauma Surg. 2024 Sep; 144(9):4179-4206. doi: 10.1007/s00402-024-05507-y.

2 Memtsoudis SG, Fiasconaro M, Soffin EM, Liu J, Wilson LA, Poeran J, Bekeris J, Kehlet H. Enhanced recovery after surgery components and perioperative outcomes: a nationwide observational study. Br J Anaesth. 2020 May; 124(5):638-647. doi: 10.1016/j.bja.2020.01.017.

3 Ljungqvist O, Scott M, Fearon KC. Enhanced recovery after surgery: a review. JAMA Surg. 2017; 152(3):292-298. doi: 10.1001/jamasurg.2016.4952.

4 Cohen SP, Vase L, Hooten WM. Chronic pain: an update on burden, best practices, and new advances. Lancet. 2021; 397(10289):2082-2097. doi: 10.1016/S0140-6736(21)00393-7.

5 Mills SEE, Nicolson KP, Smith BH. Chronic pain: a review of its epidemiology and associated factors in population-based studies. Br J Anaesth. 2019; 123(2):e273-e283. doi: 10.1016/j.bja.2019.03.023.