



Title	Paravertebral Blocks for Anesthesia and Analgesia
Agency	ASERNIP-S, Australian Safety and Efficacy Register of New Interventional Procedures – Surgical PO Box 553 Stepney, Australia; Tel +61 8 83637513, Fax +61 8 83622077; college.asernip@surgeons.org
Reference	ASERNIP-S Report Number 47. ISBN 0-909844-70-4 Full text available: www.surgeons.org/asernip-s/ (publications page)

Aim

To make recommendations on the safety and efficacy of thoracic and lumbar paravertebral blocks.

Conclusions and results

Paravertebral blocks (PVB) for surgical anesthesia were compared to general anesthesia (GA) or other regional anesthetic techniques, while the postoperative analgesia by PVB was compared to regional blocks or analgesic drugs. The ability to draw firm conclusions was limited by the high number of indications, the diversity of outcomes, and how outcomes were measured.

For anesthesia: PVB seems to be safe and, compared to GA, substantially reduces nausea and vomiting, although PVB shows a small risk of pleural and vascular punctures and epidural spread. The PVB failure rate was no higher than 20%, and patients were more satisfied with PVB than with GA.

For analgesia: PVB appears to be about as effective as other forms of regional analgesia. The results for pain relief, nausea, and vomiting were not as clear, but PVB appeared to be as effective and safe as the comparators. There is a small risk of punctures and epidural spread, which would increase with multiple PVB procedures, eg, in treating chronic pain.

Cost: No information was available to compare the costs of PVB with GA for anesthesia, or PVB with local analgesia. However, limited data from 2 studies indicated that avoiding an overnight stay after PVB could save 500 to 1000 Australian dollars.

Evidence rating: The evidence base in this review is rated as average.

Safety and efficacy: PVB at the level of the thoracic and lumbar vertebrae are at least as safe as (1) GA and other regional anesthetic techniques for surgery, and (2) analgesic drugs and other regional blocks for postoperative analgesia.

Recommendations

Anesthetists wishing to use the PVB technique should undergo appropriate training and supervised instruction until competent, and there should be ongoing audit of their performance.

Methods

Search strategy: MEDLINE, EMBASE, The Cochrane Library, Science Citation Index, and Current Contents from inception to December 2004. The Clinical Trials Database, NHS Centre for Research and Dissemination, NHS Health Technology Assessment, National Research Register, National Institute of Health, and Meta Register of Controlled Trials were searched in December 2004.

Study selection: Randomized controlled trials, historical and/or nonrandomized comparative studies, case series, and case reports in humans of at least 18 years of age were included. Comparative studies concerned the comparative interventions, defined as GA or any other method of analgesia. Efficacy outcomes included surgical anesthesia, pain scores, and length of hospitalization. Safety outcomes included complications, eg, pneumothorax, nausea, urinary retention.

Data collection and analysis: Data were extracted by the ASERNIP-S researcher using standardized data extraction tables developed *a priori* and checked by a second researcher. Relative risks with 95% confidence intervals were calculated for some outcomes in individual RCTs.

Further research/reviews required

Additional high quality, prospective randomized controlled trials would strengthen the evidence base for PVB. Cost-effectiveness studies that address the Australian healthcare context should be considered.