

The Impact of Different Regional Anesthesia Techniques on the Incidence of Chronic Post-Surgical Pain in Patients Undergoing Video-Assisted Thoracoscopic Surgery: A Network Meta-Analysis

Yue Zhao¹, Yaming Guo², Xue Pan¹, Xinyue Zhang¹, Fang Yu¹, Xuezhao Cao^{✉1}

¹Department of Anesthesiology, the First Hospital of China Medical University, Shenyang, China

²Department of General Surgery, Hepatobiliary and Splenic Surgery Ward, Shengjing Hospital of China Medical University, Shenyang, China

✉Correspondence to Dr Xuezhao Cao, Department of Anesthesiology, the First Hospital of China Medical University, 110001, Shenyang, China; xzcaoc@cmu.edu.cn

YZ and YG contributed equally.

Supplementary File 1

Search strategy:

A search strategy was developed to identify studies comparing the effects of PVB, ICNB, SAPB, ESPB or TEA for managing CPSP in VATS patients. The search keywords were combined as follows:

chronic pain AND (VATS OR thoracoscope) AND (paravertebral block OR PVB OR intercostal nerve block OR ICNB OR serratus anterior plane block OR SAPB OR erector spinae plane block OR ESPB OR epidural block OR TEA)

PubMed

```
((((((((((((((((((("Anesthesia, Epidural"[Mesh]) OR (paravertebral block[Title/Abstract])) OR (PVB[Title/Abstract])) OR (intercostal nerve block[Title/Abstract])) OR (ICNB[Title/Abstract])) OR (serratus anterior plane block[Title/Abstract])) OR (SAPB[Title/Abstract])) OR (erector spinae plane block[Title/Abstract])) OR (ESPB[Title/Abstract])) OR (epidural block[Title/Abstract])) OR (TEA[Title/Abstract])) OR (Anesthesia, Epidural[Title/Abstract])) OR (Anesthesia, Peridural[Title/Abstract])) OR (Anesthesias, Peridural[Title/Abstract])) OR (Peridural Anesthesia[Title/Abstract])) OR (Peridural Anesthesias[Title/Abstract])) OR (Anesthesia, Extradural[Title/Abstract])) OR (Anesthesias, Extradural[Title/Abstract])) OR (Extradural Anesthesia[Title/Abstract])) OR (Extradural Anesthesias[Title/Abstract])) OR (Epidural Anesthesia[Title/Abstract])) OR (Anesthesias, Epidural[Title/Abstract])) OR (Epidural Anesthesias[Title/Abstract])) AND (((((((((((((((((((("Thoracic Surgery, Video-Assisted"[Mesh]) OR (Surgeries, Video-Assisted Thoracic[Title/Abstract])) OR (Surgery, Video-Assisted Thoracic[Title/Abstract])) OR (Thoracic Surgeries, Video-Assisted[Title/Abstract])) OR (Thoracic Surgery, Video Assisted[Title/Abstract])) OR (Video-Assisted Thoracic Surgeries[Title/Abstract])) OR (Video-Assisted Thoracoscopic Surgery[Title/Abstract])) OR (Surgeries, Video-Assisted Thoracoscopic[Title/Abstract])) OR (Surgery, Video-Assisted Thoracoscopic[Title/Abstract])) OR (Thoracoscopic Surgeries, Video-Assisted[Title/Abstract])) OR (Thoracoscopic Surgery, Video-Assisted[Title/Abstract])) OR (Video Assisted Thoracoscopic Surgery[Title/Abstract])) OR (Video-Assisted Thoracoscopic Surgeries[Title/Abstract])) OR (Video-Assisted Thoracic Surgery[Title/Abstract])) OR (Video Assisted Thoracic Surgery[Title/Abstract])) OR (Surgery, Thoracic, Video-Assisted[Title/Abstract])) OR (VATS[Title/Abstract])) OR (VATSS[Title/Abstract])) OR ("Thoroscopes"[Mesh])) OR (Thoracoscope[Title/Abstract])) OR (Pleuroscopes[Title/Abstract])) OR (Pleuroscope[Title/Abstract])) AND (((((((((((((((((((("Pain, Postoperative"[Mesh]) OR (Postoperative Pain, Chronic[Title/Abstract])) OR (Pain, Chronic Postoperative[Title/Abstract])) OR (Chronic Postoperative Pain[Title/Abstract])) OR (Chronic Postsurgical Pain[Title/Abstract])) OR (Chronic Post surgical Pain[Title/Abstract])) OR (Pain, Chronic Postsurgical[Title/Abstract])) OR (Post-surgical Pain, Chronic[Title/Abstract])) OR (Chronic Postsurgical Pain[Title/Abstract])) OR (Chronic Postsurgical Pains[Title/Abstract])) OR (Pain, Chronic Postsurgical[Title/Abstract])) OR (Postsurgical Pain, Chronic[Title/Abstract])) OR (Persistent Postsurgical Pain[Title/Abstract])) OR (Pain, Persistent Postsurgical[Title/Abstract])) OR (Postsurgical Pain, Persistent[Title/Abstract])) OR (Post-operative Pain, Chronic[Title/Abstract])) OR (Pain, Chronic Post-operative[Title/Abstract])) OR (Post operative Pain, Chronic[Title/Abstract])) OR (Chronic Post-operative Pain[Title/Abstract])) OR (Chronic Post operative Pain[Title/Abstract]))
```

the Cochrane Library

- #1 (vats):ti,ab,kw (Word variations have been searched) 1670
- #2 MeSH descriptor: [Pain, Postoperative] explode all trees 19482
- #3 (Pain, Postoperative or Postoperative Pain, Chronic or Pain, Chronic Postoperative or Chronic Postoperative Pain or Chronic Postsurgical Pain or Chronic Post surgical Pain or Pain, Chronic Postsurgical or Postsurgical Pain, Chronic or Chronic Postsurgical Pain or Chronic Postsurgical Pains or Pain, Chronic Postsurgical or Postsurgical Pain, Chronic or Persistent Postsurgical Pain or Pain, Persistent Postsurgical or

Postsurgical Pain, Persistent or Post-operative Pain, Chronic or Pain, Chronic Post-operative or Post operative Pain, Chronic or Chronic Post-operative Pain or Chronic Post operative Pain):ti,ab,kw (Word variations have been searched)62146

#4 #2 or #3 62279

#5 MeSH descriptor: [Thoracic Surgery, Video-Assisted] explode all trees 403

#6 MeSH descriptor: [Thorascopes] explode all trees 4

#7 #5 or #6 405

#8 (Thoracic Surgery, Video-Assisted or Thorascopes or Surgeries, Video-Assisted Thoracic or Surgery, Video-Assisted Thoracic or Thoracic Surgeries, Video-Assisted or Thoracic Surgery, Video Assisted or Video-Assisted Thoracic Surgeries or Video-Assisted Thorascopic Surgery or Surgeries, Video-Assisted Thorascopic or Surgery, Video-Assisted Thorascopic or Thorascopic Surgeries, Video-Assisted or Thorascopic Surgery, Video-Assisted or Video Assisted Thorascopic Surgery or Video-Assisted Thorascopic Surgeries or Video-Assisted Thoracic Surgery or Video Assisted Thoracic Surgery or Surgery, Thoracic, Video-Assisted or VATS or VATSs or Thoracoscope or Pleuroscopes or Pleuroscope):ti,ab,kw (Word variations have been searched) 3571

#9 #7 or #8 3571

#10 MeSH descriptor: [Anesthesia, Epidural] explode all trees 2141

#11 (Anesthesia, Epidural or paravertebral block or PVB or intercostal nerve block or ICNB or serratus anterior plane block or SAPB or erector spinae plane block or ESPB or epidural block or TEA or Anesthesia, Epidural or Anesthesia, Peridural or Anesthesias, Peridural or Peridural Anesthesia or Peridural Anesthesias or Anesthesia, Extradural or Anesthesias, Extradural or Extradural Anesthesia or Extradural Anesthesias or Epidural Anesthesia or Anesthesias, Epidural or Epidural Anesthesias):ti,ab,kw (Word variations have been searched)17818

#12 #10 or #11 17959

#13 #4 and #9 and #12 515

EMBASE

('Postoperative Pain, Chronic':ab,kw,ti OR 'Pain, Chronic Postoperative':ab,kw,ti OR 'Chronic Postoperative Pain':ab,kw,ti OR 'Chronic Post-surgical Pain':ab,kw,ti OR 'Chronic Post surgical Pain':ab,kw,ti OR 'Pain, Chronic Post-surgical':ab,kw,ti OR 'Post-surgical Pain, Chronic':ab,kw,ti OR 'Chronic Postsurgical Pain':ab,kw,ti OR 'Chronic Postsurgical Pains':ab,kw,ti OR 'Pain, Chronic Postsurgical':ab,kw,ti OR 'Postsurgical Pain, Chronic':ab,kw,ti OR 'Persistent Postsurgical Pain':ab,kw,ti OR 'Pain, Persistent Postsurgical':ab,kw,ti OR 'Postsurgical Pain, Persistent':ab,kw,ti OR 'Post-operative Pain, Chronic':ab,kw,ti OR 'Pain, Chronic Post-operative':ab,kw,ti OR 'Post operative Pain, Chronic':ab,kw,ti OR 'Chronic Post-operative Pain':ab,kw,ti OR 'Chronic Post operative Pain':ab,kw,ti) AND ('Surgeries, Video-Assisted Thoracic':ab,kw,ti OR 'Surgery, Video-Assisted Thoracic':ab,kw,ti OR 'Thoracic Surgeries, Video-Assisted':ab,kw,ti OR 'Thoracic Surgery, Video Assisted':ab,kw,ti OR 'Video-Assisted Thoracic Surgeries':ab,kw,ti OR 'Video-Assisted Thorascopic Surgery':ab,kw,ti OR 'Surgeries, Video-Assisted Thorascopic':ab,kw,ti OR 'Surgery, Video-Assisted Thorascopic':ab,kw,ti OR 'Thorascopic Surgeries, Video-Assisted':ab,kw,ti OR 'Thorascopic Surgery, Video-Assisted':ab,kw,ti OR 'Video Assisted Thorascopic Surgery':ab,kw,ti OR 'Video-Assisted Thorascopic Surgeries':ab,kw,ti OR 'Video-Assisted Thoracic Surgery':ab,kw,ti OR 'Video Assisted Thoracic Surgery':ab,kw,ti OR 'Surgery, Thoracic, Video-Assisted':ab,kw,ti OR 'VATS':ab,kw,ti OR 'VATSS':ab,kw,ti OR 'Thoracoscope':ab,kw,ti OR 'Pleuroscopes':ab,kw,ti OR 'Pleuroscope':ab,kw,ti) AND ('paravertebral block':ab,kw,ti OR 'PVB':ab,kw,ti OR 'intercostal nerve block':ab,kw,ti OR 'ICNB':ab,kw,ti OR 'serratus anterior plane block':ab,kw,ti OR 'SAPB':ab,kw,ti OR 'erector spinae plane block':ab,kw,ti OR 'ESPB':ab,kw,ti OR 'epidural block':ab,kw,ti OR 'TEA':ab,kw,ti OR 'Anesthesia, Epidural':ab,kw,ti OR 'Anesthesia, Peridural':ab,kw,ti OR 'Anesthesias, Peridural':ab,kw,ti OR 'Peridural Anesthesia':ab,kw,ti OR 'Peridural Anesthesias':ab,kw,ti OR 'Anesthesia, Extradural':ab,kw,ti OR 'Anesthesias, Extradural':ab,kw,ti OR 'Extradural Anesthesia':ab,kw,ti OR 'Extradural Anesthesias':ab,kw,ti OR 'Epidural Anesthesia':ab,kw,ti OR 'Anesthesias, Epidural':ab,kw,ti OR 'Epidural Anesthesias':ab,kw,ti)