

reference	participants' characteristics	intervention group/ control group	outcomes	critical appraisal/ conclusion
<p>Kaya et al. 2012 Thoracic paravertebral block for video-assisted thoracoscopic surgery: single injection versus multiple injections. J Cardiothorac Vasc Anesth. 2012;26(1):90-4.</p>	<p>inclusion criteria - age 18–65 yrs - ASA physical status I–III exclusion criteria - cardiac, renal or hepatic failure, - allergy to study medications - uncontrolled systemic disease - FEV₁ <60% of reference value - sleep apnea demographic data (mean±SD): group S group M p sex (m/f) 20/5 18/7 age (yrs) 52.7±5.9 53.1±7.8 0.836 weight (kg) 73.1±9.2 72.2±7.6 0.704 height (cm) 167.5±7.9 168.5±9.2 0.678 ASA class I/II/III 3/18/4 5/17/3 0.701 FEV₁ (% predicted) 84.2±6.8 86.9±7.6 0.188 FVC (% predicted) 87.9±7.6 88.3±8.1 0.856 patient flow and follow up: total patient number included: 50 randomised in: group S: 25 group M: 25 excluded: 0 analysed: 50</p>	<p>intervention given with anaesthesia - PVB solution: 0.5% bupivacaine, 20 mL + 1:200,000 epinephrine - group M, 4 mL of the solution were injected at each level. multiple-injection thoracic PVBs at T4 to T8 - group S, 20 mL of the solution were injected in a single dose a single-injection thoracic PVB at T6 - total dose of bupivacaine did not exceed 3 mg/kg mode of anaesthesia fentanyl surgical approach (n) group S group M p Wedge resection 5 7 0.741 Lung biopsy 6 5 1.0 Pleural biopsy 8 7 1.0 Pleurodesis 6 6 1.258 Duration of surgery (min) 49.7±9.8 46.8±8.3 0.263 at the end of surgery not reported supplemental analgesia - for 24 h post op, IM diclofenac (75 mg, b.i.d.) postoperative analgesia - PCA morphine, 30 µg/kg, 10 min lo</p>	<p>postoperative pain [VAS_R at rest, VAS_C on coughing]: median (interquartile range). group S group M h VAS_R VAS_C VAS_R VAS_C 0 2(0-5) 3(2-5) 2(0-4) 3(2-6) 1 2(0-5) 4(2-5) 2(0-4) 3(3-5) 2 3(0-5) 3(2-4) 2(0-4) 3(2-4) 4 2(0-4) 4(3-5) 2(0-4) 4(3-5) 8 2(0-4) 3(2-5) 2(0-4) 3(2-5) 12 2(0-4) 3(2-4) 2(0-4) 3(2-4) 24 2(0-4) 3(2-3) 2(0-3) 3(2-4) - pain scores were similar in both groups time to first analgesic request [h]: mean±SD group S group M p 1.9±0.7 1.6±0.5 0.509 total dosage of morphine in 24 h - similar in both groups patient satisfaction with analgesic procedure 4-point satisfaction scale (0=very unsatisfied, 1=unsatisfied, 2=satisfied, 3=very satisfied) group S group M p 1/2/9/13 3/4/13/5 0.028 - patient satisfaction with the analgesic procedure was significantly greater in group S due to shorter procedure time with the single injection (p< 0.05) adverse effects/ events: n (%) - none reported</p>	<p>methodological shortcomings - not reported how the sequence was concealed until interventions were assigned - not reported who generated the allocation sequence, who enrolled participants, and who assigned the participants to their groups - participant flow through each stage was not reported - participant flow through each stage was not reported - protocol deviations from study as planned not described - dates defining the period of recruitment and follow-up not reported level of evidence: 1 authors' conclusion "Multiple-injection PVB provided no extra benefit to postoperative pain control compared with the single-injection PVB. However, the single-injection technique was characterized by a greater patient satisfaction associated with a shorter procedure time and the likelihood of decreased complications."</p>
<p>Kaya et al. 2006 Preoperative multiple-injection thoracic paravertebral blocks reduce postoperative pain and analgesic requirements after video-assisted thoracic surgery. J Cardiothorac Vasc Anesth 2006;20:639–43.</p>	<p>inclusion criteria - ASA physical status I–III exclusion criteria - cardiac, renal or hepatic failure, - allergy to study medications - uncontrolled systemic disease - FEV₁ <60% of reference value - sleep apnea demographic data: group P group C p sex (m/f) 20/5 18/4 NS age (yrs) 56.2±5.7 52.4±6.5 NS weight (kg)</p>	<p>intervention prior to anaesthesia - group P (PVB): PVB with 4 mL of 0.5% bupivacaine + 1:200,000 epinephrine injected at each of the 5 levels (T4–8) - group C (control): preop multiple subcutaneous saline injections at the same 5 sites as group P mode of anaesthesia - fentanyl surgical approach (n) group P group C p wedge resection 5 4 NS lung biopsy</p>	<p>postoperative pain [VAS]: mean (95% CI) group P group C h VAS_R VAS_C VAS_R VAS_C 0 2(1–2)* 3(3–4)* 5(4–6) 6(5–7) 1 2(1–2)† 3(3–4)† 3(2.8–4) 6(4–6.5) 2 2(1–3)† 3(2–3)† 3(2–3.5) 4(2.8–4) 4 1(1–2)† 3(2–4)† 3(2–4) 5(4–6) 8 2(1–2) 3(3–4) 2(1–3) 3(3–4.5) 16 2(1–2) 3(2–3) 2(1–2.5) 3(2–4) 24 2(1–2) 2(2–3) 2(1–3.5) 3(2–3.5) 36 2(1–2) 2(2–3) 2(1–3) 3(2–3.5) 48 1(1–2) 2(2–3) 2(1–2.5) 3(2–3) *p<0.01 versus group C †p<0.05 versus group C</p>	<p>methodological shortcomings - not reported who generated the allocation sequence, who enrolled participants, and who assigned the participants to their groups - participant flow through each stage was not reported - protocol deviations from study as planned not described - dates defining the period of recruitment and follow-up not reported level of evidence: 1 authors' conclusion "use of perioperative multiple-injection thoracic PVBs provided improved early</p>

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	<p>77.8±5.2 79.6±5.4 NS height (cm) 169.2±7.4 167.2±11.2 NS ASA status I/II/III 5/16/4 5/15/2 NS FEV₁ (% predicted) 77.8±6.5 78.4±8.6 NS FVC (% predicted) 104.6±12.8 100.7±15.9 NS</p> <p>patient flow and follow up: <u>total patient number included:</u> 50 <u>randomised in:</u> group P: 25 group C: 22 <u>excluded:</u> 3 <u>analysed:</u> 47 <u>follow-up:</u> 0, 1, 2, 4, 8, 12, 24, 36, and 48 h</p>	<p>9 9 NS pleural biopsy 11 9 NS</p> <p>at the end of surgery - not reported supplemental analgesia - not reported postoperative analgesia - PCA morphine, 30 µg/kg, 10 min lo</p>	<p>time to first analgesic request [h]: median (interquartile range). group P group C p 2(2-2) 0(0-1) <0.05: mean dosage of morphine in 48 h [mg]: mean±SD group P group C p 48.6±7.4 75.3±9.9 p<0.01</p> <p>adverse effects/ events: n</p> <table border="1" data-bbox="1171 475 1677 528"> <thead> <tr> <th></th> <th>group P</th> <th>group C</th> </tr> </thead> <tbody> <tr> <td>nausea</td> <td>0</td> <td>2</td> </tr> <tr> <td>pruritis</td> <td>0</td> <td>1</td> </tr> </tbody> </table>		group P	group C	nausea	0	2	pruritis	0	1	<p>postoperative pain relief and reduced morphine consumption"</p>
	group P	group C											
nausea	0	2											
pruritis	0	1											