Supplementary Table 1. Summary of RCTs Published Between January 2017 and July 2019

Authors (Year)	N	Jadad Score	Control Group	Study Group	Primary Outcome	Blind Assessment	Sample Size Justification	Main Findings	HDP
Albrecht et al (2017) **(14)**	68	4	Continuous ISB with catheter tip outside the brachial plexus sheath Bolus: 30 mL R0.5% Infusion: 4 mL/h R0.2%	Continuous ISB with catheter tip inside the brachial plexus sheath Bolus: 20 mL R0.5% Infusion: 4 mL/h R0.2%	HDP on POD 1	Y	Y	No intergroup differences in terms of intraoperative opioid consumption, postoperative analgesia, patient satisfaction, and length of hospital stay	Extrafascial group: lower rate of HDP (15% vs. 41%)
Ayyanagouda et al (2019) **(15)**	59	4	Extrafascial ISB (20 mL R0.5%)	Intrafascial ISB (20 mL R0.5%)	HDP 30 minutes after ISB	Y	Y	No intergroup differences in postoperative analgesia, sensorimotor block duration, and patient satisfaction. Intrafascial group: quicker onset of sensorimotor block Extrafascial group: better preservation of FEV1, FVC and PEF	Extrafascial group: lower rate of HDP (17% vs. 46%)
Auyong et al (2017) **(16)**	75	4	Continuous ISB (6 mL/h R0.2%)	Continuous SCB (6 mL/h R0.2%) Continuous anterior SSNB (6 mL/h R0.2%)	Difference in VC at 24h compared to baseline	Y	Y	SCB and SSNB: better diaphragmatic excursion than ISB SSNB: improved postoperative VC compared to ISB No intergroup differences in postoperative analgesia, intra/ postoperative opioid consumption and patient satisfaction	Not assessed
Kim et al (2017) **(17)**	49	4	Extrafascial ISB (20 mL R0.375%)	SCB with LA injection in the neural cluster (20 mL R0.375%)	Postoperative analgesic duration	Y	Y	No intergroup differences in analgesic durations, postoperative analgesia, intraoperative	SCB: lower rate of HDP 30 min after the block (66.7% vs. 92%) and in PACU (62.5% vs. 92%)

								fentanyl consumption, postoperative analgesic requirement and patient satisfaction	
Trabelsi et al (2017) **(18)**	60	3	ISB (30 mL B0.25%)	SCB-SSNB (15 + 15 mL B0.25%)	First analgesic request	Y	Y	No intergroup differences in first analgesic request, sensorimotor block onset, sensorimotor block duration, postoperative analgesia and postoperative opioid consumption	Not assessed
Koltka et al (2017) **(19)**	50	2	ISB (30 mL B0.5%)	SCB (technique not specified) (30 mL B0.5%)	Pain (time interval not specified)	N	Y	No intergroup differences in postoperative analgesia ISB: lower postoperative morphine requirement and higher patient satisfaction	Not assessed
Auyong et al (2018) **(20)**	189	4	ISB (15 mL R0.5%)	SCB with LA injection in the superior portion of the brachial plexus (15 mL R0.5%) Anterior SSNB 15 mL R0.5%)	Pain 60 min after surgical completio n	Y	Y	Noninferior analgesia between ISB and SSNB Inferior analgesia with SCB compared to ISB No intergroup differences in intraoperative, postoperative opioid consumption and patient satisfaction at 24 h Better preservation of FEV1, FVC and diaphragmatic excursion with SCB and SSNB than ISB	Not assessed
Karaman et al (2019) **(21)**	60	4	ISB (20 mL B0.25%)	SCB (technique not specified) (20 mL B0.25%)	Pain in PACU	Y	Y	No intergroup differences in postoperative analgesia, analgesic duration, analgesic requirement and QoR-40 scores at 24 h	Not assessed

Aliste et al (2018) **(22)**	44	3	Intrafascial ISB (20 mL LB 0.5%-epinephrine 5 µg/mL- 4 mg IV dexamethasone)	SCB with LA injection posterolateral to the brachial plexus (20 mL LB 0.5%-epinephrine 5 µg/mL- 4 mg IV dexamethasone)	Postoperative pain at 30 minutes	Y	Y	No intergroup differences in intra/ postoperative opioid consumption, pain scores from 0 to 24 h, and patient satisfaction	SCB: lower rate of HDP (9% vs. 95%)
Aliste et al (2018**) (23)**	40	3	Intrafascial ISB (20 mL LB 0.25%-epinephrine 5 µg/mL)	ICB-posterior SSNB (20 + 10 mL LB 0.25%-epinephrine 5 µg/mL)	Postoperative pain at 30 minutes	Y	Y	ISB: lower pain scores at 30 min and cumulative morphine requirement at 24 h No intergroup differences in intraoperative opioid consumption, pain scores from 1 to 24 h, and patient satisfaction	ICB-SSNB: lower rate of HDP (0% vs. 90%)
Taha et al (2019) **(24)**	72	3	ISB (5 mL R0.5%)	ICB-anterior SSNB (20 + 5 mL R0.5%)	Postoperative HDP	Y	Y	No intergroup differences in terms of postoperative (PACU) analgesia, duration of analgesia, postoperative opioid consumption and patient satisfaction	ICB-SSNB: lower rate of HDP (5.6% vs. 88.9%)
Aliste et al (2019) **(25)**	44	3	Intrafascial ISB (20 mL LB 0.5%-epinephrine 5 µg/mL- 4 mg IV dexamethasone)	CCB (20 mL LB 0.5%-epinephrine 5 µg/mL- 4 mg IV dexamethasone)	Postoperative pain at 30 minutes	Y	Y	No intergroup differences in intra/ postoperative opioid consumption, pain scores from 0 to 24 h, and patient satisfaction	CCB: lower rate of HDP (0% vs. 100%)
Neuts et al (2018) **(26)**	98	3	Extrafascial ISB (20 mL R0.75%)	AXNB + posterior SSNB (10 mL + 10 mL R0.75%)	Postoperative pain at 4 h	Y	Y	No intergroup differences in terms of quality of sleep and patient satisfaction AXNB + SSNB: higher pain scores in first 8 h, higher piritramide consumption in first 8 h, lower incidence of dyspnea (8.3% vs. 28%)	Not assessed
Pani et al (2019) **(27)**	72	3	ISB (10 mL R0.75%)	AXNB + posterior SSNB (10 mL + 10 mL R0.75%)	Postoperative pain on first day	Y	Y	No intergroup differences in terms of postoperative pain, analgesic duration and	Not assessed

								paracetamol consumption AXNB + SSNB: higher patient satisfaction	
Kim et al (2019) **(28)**	125	5	Intrafascial ISB (15 mL B0.5%)	STB (15 mL B0.5%)	HDP and worst pain in PACU	Y	Y	No intergroup differences in terms of worst PACU pain, postoperative opioid consumption STB: better preservation of mean minute ventilation, tidal volume and diaphragmatic excursion in PACU; higher patient satisfaction in PACU; lower worst pain scores at rest on POD 1 and on movement on POD 2	STB: lower rate of HDP (4.8% vs. 71.4%)
Wiegel et al (2017) **(29)**	329	5	ISB (20 mL R0.75%)	Anterior SSNB (10 mL R1%)	Postoperative pain and grip strength	Y	Y	No intergroup differences in intraoperative opioid consumption, postoperative pain, postoperative analgesic consumption and dyspnea SSNB: superior postoperative grip strength and patient satisfaction	Not assessed

AXNB = axillary nerve block; B = bupivacaine; CCB = costoclavicular block; FEV1 = forced expiratory volume in 1 second; CMAP = compound muscle action potential; FVC = forced vital capacity; HDP = hemidiaphragmatic paralysis; ICB = infraclavicular block; ISB = interscalene block; IV = intravenous; LA = local anesthetic; LB = levobupivacaine; N = no; PACU = post anesthesia care unit; PEF = peak expiratory flow; POD = postoperative day; QoR = quality of recovery; R = ropivacaine; RCT = randomized controlled trial; SCB = supraclavicular block; SSNB = suprascapular nerve block; STB = superior trunk block; VC = vital capacity; Y = yes.