

Supplemental Materials

Analgesic effects of regional analgesic techniques in pediatric inguinal surgeries: a systematic review and network meta-analysis of randomized controlled trials

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Abbreviations

ASA, American Society of Anesthesiologists Physical Status; Caudal, caudal block; CI, confidence interval; ESB, erector spinae block; II-IHB, ilioinguinal-iliohypogastric block, IM, intramuscular; IV, intravenous; LB, landmark-based; MD, mean difference; mon, month; NM, not mentioned; PO, per os; PRN, pro re nata; PVB, paravertebral block; QLB, quadratus lumborum block; RCTs, randomized controlled trials; RLB, retrolaminar block; SUPP, suppository; TAPB, transversus abdominis plane block; TFPB, transversalis fascia plane block; UG, ultrasound-guided; UK, the United Kingdom; USA, the United State of America; WI, wound infiltration; yr, year

Section 1. Keywords and search strategy for Pubmed

1. ("child"[MeSH Terms] OR "child"[All Fields]) OR ("pediatric"[MeSH Terms] OR "pediatric"[All Fields]) OR ("infant"[MeSH Terms] OR "infant"[All Fields]) OR ("neonate"[MeSH Terms] OR "neonate"[All Fields])
2. ("inguinal hernia"[MeSH Terms] OR "inguinal hernia"[All Fields]) OR ("groin"[MeSH Terms] OR "groin"[All fields]) OR ("hernia repair"[MeSH Terms] OR "hernia repair"[All Fields]) OR "herniotomy"[All fields]
3. ("undescended testes"[MeSH Terms] OR "undescended testes"[All Fields]) OR ("orchidopexy"[MeSH Terms] OR "orchidopexy"[All Fields])
4. ("hydrocele"[MeSH Terms] OR " hydrocele"[All Fields]) OR "hydrocelectomy"[All Fields]
5. ("genitourinary surgery"[MeSH Terms] OR " genitourinary surgery"[All Fields])
6. 2 OR 3 OR 4 OR 5
7. ("regional anesthesia"[MeSH Terms] OR "regional anesthesia"[All Fields])
8. ("caudal anesthesia"[MeSH Terms] OR "caudal anesthesia"[All Fields]) OR "caudal block"[All Fields]
9. ("nerve block"[MeSH Terms] OR "nerve block"[All Fields]) OR "plane block"[All Fields] OR "transversus abdominis"[All Fields] OR "erector spinae"[All Fields] OR ("quadratus lumborum"[MeSH Terms] OR "quadratus lumborum"[All Fields]) OR "rectus sheath"[All Fields] OR ("ilioinguinal"[MeSH Terms] OR "ilioinguinal"[All Fields]) OR ("iliohypogastric"[MeSH Terms] OR "iliohypogastric"[All Fields])
10. "wound infiltration"[All Fields] OR ("instillation"[MeSH Terms] OR "instillation"[All Fields])
11. 7 OR 8 OR 9 OR 10
12. 1 AND 6 AND 11

Section 2. Characteristics of the included randomized controlled trials

Author Year	Study Country	Patient ASA PS	Patient Age	Surgery Type	Maintenance for General anaesthesia	Intervention					Routine non-opioid analgesia	In-Hospital Rescue Analgesia		Home Rescue analgesia	
						Technique	Case	Medication		Dose		Timing	Medication	Timing	Medication
Coşarcan 2022	Turkey	I-II	1 – 8 yr	Elective unilateral inguinal hernia operation	Sevoflurane + N ₂ O	Sacral epidural block (S2-3)	30	Bupivacaine	0.25%	0.7 ml kg ⁻¹		CHEOPS ≥10, APDS ≥5	Paracetamol PO		
						LB-II-IHB	30	Bupivacaine	0.25%	0.7 ml kg ⁻¹					
Priyadarshini 2022	India	I – II	2 – 12 yr	Elective open inguinal hernia repair	Isoflurane	UG-TAPB	20	Ropivacaine	0.25%	0.4 ml kg ⁻¹	Paracetamol IV 15 mg kg ⁻¹	FLACC >4	Paracetamol IV 15 mg kg ⁻¹		
						UG-II-IHB	20	Ropivacaine	0.25%	0.2 ml kg ⁻¹		If FLACC still >4	Tramadol IV 1 mg kg ⁻¹		
						UG-QLB	20	Ropivacaine	0.25%	0.4 ml kg ⁻¹					
Abdelbaser 2021	Egypt	I – II	12 – 60 mon	Elective unilateral inguinal herniorrhaphy	Sevoflurane	UG-TFPB	20	Bupivacaine	0.25%	0.4 ml kg ⁻¹	Diclofenac SUPP 1 mg kg ⁻¹	FLACC ≥4	Paracetamol IV 10 mg kg ⁻¹		
						Control	20					If FLACC still ≥4	Fentanyl IV 1 µg kg ⁻¹		
Alsoody 2021	Egypt	I – II	2 – 6 yr	Unilateral inguinal herniotomy	Sevoflurane	UG-RLB	30	Bupivacaine	0.25%	0.5 ml kg ⁻¹	Paracetamol IV 10 mg kg ⁻¹	FLACC >5	Fentanyl IV 0.5 µg kg ⁻¹		
						UG-II-IHB	30	Bupivacaine	0.25%	0.5 ml kg ⁻¹		FLACC >2	Ibuprofen PO 10 mg kg ⁻¹		
Benka 2020	Servia	I	2 – 5 yr	Elective inguinal herniorrhaphy	Propofol	UG-Caudal block	30	Levobupivacaine		2.5 mg kg ⁻¹		Comfort scale ≥3	Paracetamol IV 15 mg kg ⁻¹		
						Control	30								
Genç 2020	Turkey	I – II	3 – 16 yr	Unilateral inguinal hernia, undescended testis and hydrocele operations.	Sevoflurane	UG-QLB	20	Bupivacaine	0.20%	0.5 ml kg ⁻¹	Paracetamol IV 15 mg kg ⁻¹	Wong-Baker facial pain scale ≥3	Tramadol IV 1 mg kg ⁻¹	Wong-Baker facial pain scale ≥3	Paracetamol PO
						Systemic analgesic	20	Tramadol IV		1 mg kg ⁻¹		if Wong-Baker facial pain scale still ≥3	Morphine IV 0.1 mg kg ⁻¹		
Karim 2020	India	I – II	6 mon – 7 yr	Elective hernia repair	Sevoflurane	UG-II-IHB	50	Bupivacaine	0.25%	0.2 ml kg ⁻¹	Paracetamol IV 15 mg kg ⁻¹	FLACC >4 at PACU	Fentanyl IV 0.5 µg kg ⁻¹	FLACC >4	Paracetamol 10 mg kg ⁻¹
						WI	50	Bupivacaine	0.25%	0.2 ml kg ⁻¹		FLACC >4 at ward	Paracetamol 10 mg kg ⁻¹		
Kodali 2020	India	I – II	6 mon – 8 yr	Inguinal hernia repair	Sevoflurane	UG-TAPB	31	Bupivacaine	0.25%	0.5 ml kg ⁻¹		FLACC >4	Paracetamol IV 7.5 mg kg ⁻¹ (< 10 kg), 15 mg kg ⁻¹ (> 10 kg)		
						Caudal block	31	Bupivacaine	0.25%	1 ml kg ⁻¹					
Kumar 2020	India	I – II	2 – 8 yr	Elective inguinal hernia surgery	Sevoflurane + N ₂ O	UG-TAPB	56	Ropivacaine	0.20%	0.5 ml kg ⁻¹		CHEOPS ≥6	Paracetamol PO 10 mg kg ⁻¹		
						Caudal block	56	Ropivacaine	0.20%	1 ml kg ⁻¹					
Öksüz 2020	Turkey	I – II	1 – 9 yr	Unilateral inguinal hernia repair and orchiopexy surgery	Sevoflurane	UG-QLB	27	Bupivacaine	0.25%	0.7 ml kg ⁻¹	Acetaminophen IV 15 mg kg ⁻¹	FLACC >4	Fentanyl IV 1 µg kg ⁻¹		
						Caudal block	25	Bupivacaine	0.25%	0.7 ml kg ⁻¹		FLACC >2	Ibuprofen PO 7 mg kg ⁻¹		
Samerchua 2020	Thailand	I – II	1 – 7 yr	Unilateral open inguinal herniotomy	Sevoflurane + N ₂ O	UG-QLB	19	Bupivacaine	0.25%	0.5 ml kg ⁻¹		CHEOPS >9 at PACU	Fentanyl IV 0.5 µg kg ⁻¹		
						UG-II-IHB	19	Bupivacaine	0.25%	0.2 ml kg ⁻¹		CHEOPS >6 at ward	Acetaminophen PO 10 mg kg ⁻¹		
Ahmad 2019	Pakistan	NM	2 mon – 5 yr	Surgery for inguinal hernia, hydrocele and undescended testis	NM	WI	70	Bupivacaine	0.25%	0.4 ml kg ⁻¹		FLACC ≥4	Additional analgesia		
						Systemic analgesic	70	Paracetamol IV		NM					
Aksu 2019	Turkey	I – II	1 – 7 yr	Inguinal hernia repair, orchiopexy and hydrocelectomy.	Sevoflurane + N ₂ O	UG-ESB	28	Bupivacaine	0.25%	0.5 ml kg ⁻¹	Acetaminophen IV 15 mg kg ⁻¹	FLACC >4	Tramadol IV 1 mg kg ⁻¹	FLACC >4	Ibuprofen PO 7 mg kg ⁻¹
						UG-QLB	29	Bupivacaine	0.25%	0.5 ml kg ⁻¹		FLACC 2-4	Acetaminophen PO 15 mg kg ⁻¹	FLACC 2-4	Acetaminophen PO 15 mg kg ⁻¹
İpek 2019	Turkey	I – II	6 mon – 14 yr	Elective unilateral inguinal hernia repair, orchiopexy and hydrocelectomy.	Sevoflurane	UG-TAPB	29	Bupivacaine	0.25%	0.5 ml kg ⁻¹		POAS >5	Paracetamol IV 10 mg kg ⁻¹	NM	Ibuprofen PO 10 mg kg ⁻¹
						UG-QLB	35	Bupivacaine	0.25%	0.5 ml kg ⁻¹					
						UG-Caudal block	30	Bupivacaine	0.25%	0.5 ml kg ⁻¹					
Ayshvarya 2018	India	I – II	1 – 7 yr	Unilateral inguinal herniotomy	Sevoflurane + N ₂ O	UG-TAPB	30	Bupivacaine	0.25%	0.5 ml kg ⁻¹		FLACC >3	Tramadol IV 1.5 mg kg ⁻¹		
						Caudal block	30	Bupivacaine	0.25%	1 ml kg ⁻¹					
Öksüz 2017	Turkey	I – II	1 – 7 yr	Unilateral inguinal hernia repair or orchiopexy	Sevoflurane	UG-TAPB	25	Bupivacaine	0.20%	0.5 ml kg ⁻¹	Acetaminophen IV 15 mg kg ⁻¹	FLACC ≥4	Tramadol IV 1 mg kg ⁻¹	Not specified	Ibuprofen PO 7 mg kg ⁻¹ PRN
						UG-QLB	25	Bupivacaine	0.20%	0.5 ml kg ⁻¹		FLACC >2	Ibuprofen PO 7 mg kg ⁻¹		
Abu Elyazed 2016	Egypt	I – II	3 – 10 yr	Elective unilateral open inguinal hernia repair	Isoflurane	UG-TAPB	30	Bupivacaine	0.25%	0.4 ml kg ⁻¹	Diclofenac SUPP 25 mg	CHEOPS >6 or OPS >5	Paracetamol IV 15 mg kg ⁻¹		
						Control	30								
Ahmed 2016	Egypt	I – II	1 – 5 yr	Elective outpatient unilateral open inguinal herniotomy	Sevoflurane + N ₂ O	UG-TAPB	20	Bupivacaine	0.25%	0.5 ml kg ⁻¹		CHIPPS >4	Acetaminophen SUPP 20 mg kg ⁻¹	Not specified	Paracetamol SUPP 15 mg kg ⁻¹
						Caudal block	20	Bupivacaine	0.20%	1 ml kg ⁻¹					
Elbahrawy 2016	Egypt	I – II	1 – 7 yr	Unilateral herniotomy, hydrocelectomy, and orchidopexy	Sevoflurane + N ₂ O	UG-TAPB	35	Bupivacaine	0.25%	1 ml kg ⁻¹	Paracetamol SUPP 15 mg kg ⁻¹	mCHEOPS ≥6	Tramadol IV 1 mg kg ⁻¹		
						Caudal block	36	Bupivacaine	0.25%	1 ml kg ⁻¹					
Gavrilovska-Brzanov 2016	Macedonia	I – II	6 mon – 7 yr	Unilateral Inguinal Hernia Repair	Sevoflurane	Caudal block	28	Bupivacaine	0.25%	1 ml kg ⁻¹		CHEOPS, FLACC >4 at PACU	Fentanyl IV 0.5 µg kg ⁻¹		
						WI	26	Bupivacaine	0.25%	0.2 ml kg ⁻¹		CHEOPS, FLACC >4 at ward	Acetaminophen PO 15 mg kg ⁻¹		
Kendigelen 2016	Turkey	I – II	6 – 8 yr	Unilateral inguinal hernia surgery	Sevoflurane	UG-TAPB	40	Bupivacaine	0.25%	0.8 ml kg ⁻¹		VAS >4 first	Tramadol IV 1 mg kg ⁻¹	Not specified	Ibuprofen PO 15 mg kg ⁻¹ PRN
						WI	40	Bupivacaine	0.50%	0.4 ml kg ⁻¹		VAS >4 consequently	Paracetamol IV 15 mg kg ⁻¹		

Ohashi 2016	Japan	I – II	1 – 6 yr	Elective inguinal hernia repair	Sevoflurane + N ₂ O	UG-II-IHB	19	Ropivacaine	0.5%	0.2 ml kg ⁻¹	Acetaminophen SUPP 15 mg kg ⁻¹	At parents' request	Acetaminophen SUPP 15 mg kg ⁻¹		
						Control	20								
Sethi 2016	India	I – II	2 – 6 yr	Unilateral herniotomy and orchidopexy	Sevoflurane + N ₂ O	UG-TAPB	34	Bupivacaine	0.25%	0.5 ml kg ⁻¹		FLACC ≥3 at first 2 h	Fentanyl IV 1 µg kg ⁻¹		
						Caudal block	36	Bupivacaine	0.25%	0.75 ml kg ⁻¹		FLACC ≥3 thereafter	Paracetamol PO 20 mg kg ⁻¹		
Toker 2016	Istanbul	I – II	1 – 7 yr	Elective unilateral inguinal herniorrhaphy	Sevoflurane + N ₂ O	Caudal block	25	Bupivacaine	0.25%	0.5 ml kg ⁻¹		CHIPPS ≥4	Paracetamol IV 15 mg kg ⁻¹		
						LB-II-IHB	25	Bupivacaine	0.25%	0.3 ml kg ⁻¹					
						WI	25	Bupivacaine	0.25%	0.2 ml kg ⁻¹					
Yang 2016	China	I – II	2 – 5 yr	Selective unilateral inguinal hernia repair	Sevoflurane	UG-TAPB	50	Levobupivacaine	0.25%	0.4 ml kg ⁻¹			Morphine PCIA No continuous infusion Bolus: 20 µg, 15 min lockout.		
						Caudal block	50	Levobupivacaine	0.25%	1 ml kg ⁻¹					
Kanojia 2015	India	I – II	1 – 12 yr	Herniotomy and orchidopexy	Sevoflurane	UG-TAPB	29	Ropivacaine	0.20%	0.3 ml kg ⁻¹		VAS ≥3	Paracetamol PO 10 mg kg ⁻¹		
						Caudal block	30	Ropivacaine	0.20%	1 ml kg ⁻¹					
Al-Zaben 2014	Jordan	I	2 – 12 yr	Unilateral orchidopexy	Sevoflurane	LB-II-IHB	35	Bupivacaine	0.50%	0.25 ml kg ⁻¹		OPS >4	Paracetamol SUPP 30 mg kg ⁻¹	OPS ≥3	Acetaminophen PO 15 mg kg ⁻¹
						Systemic analgesic	35	Morphine IV		0.1 mg kg ⁻¹				Inadequate after acetaminophen	Ibuprofen PO 5 mg kg ⁻¹
Park 2014	Korean	NM	6 mon – 7 yr	Elective unilateral inguinal hernia repair	NM	LB-II-IHB	30	Bupivacaine	0.25%	0.5 ml kg ⁻¹		FLACC >6	Pethidine IV 1 mg kg ⁻¹		
						WI	30	Bupivacaine	0.25%	0.5 ml kg ⁻¹					
						Control	30								
Akinyemi 2013	Nigeria	I	2 – 10 yr	Herniotomy	Halothane	Caudal block	27	Bupivacaine	0.25%	0.5 ml kg ⁻¹		BPRS >3	Pentazocine IV	NM	Paracetamol PO 20 mg kg ⁻¹
						Systemic analgesic	30	Pentazocine IV		0.5 mg kg ⁻¹					
Sahin 2013	Turkey	I – II	2 – 8 yr	Unilateral inguinal hernia repair	Sevoflurane + N ₂ O	UG-TAPB	29	Levobupivacaine	0.25%	0.5 ml kg ⁻¹	Paracetamol SUPP 40 mg kg ⁻¹	mCHEOPS >5	Paracetamol PO 15 mg kg ⁻¹		
						WI	28	Levobupivacaine	0.25%	0.2 ml kg ⁻¹		Unresponsive to paracetamol	Morphine IV 0.05 mg kg ⁻¹		
Abdellatif 2012	Egypt	I – II	1 – 6 yr	Unilateral inguinal hernia repair, hydrocelectomy, or orchidopexy	Sevoflurane + N ₂ O	UG-II-IHB	23	Bupivacaine	0.25%	0.1 ml kg ⁻¹		mCHEOPS >6	Paracetamol IV 15 mg kg ⁻¹	Simple pain scale 2-3	Paracetamol SUPP 15 mg kg ⁻¹
						Caudal block	24	Bupivacaine	0.25%	0.7 ml kg ⁻¹		mCHEOPS 4-5	Paracetamol SUPP 15 mg kg ⁻¹	Still in pain after paracetamol	Ibuprofen PO 10 mg kg ⁻¹
Hosseini Jahromi 2012	Iran	I – II	3 mon – 7 yr	Elective unilateral inguinal herniorrhaphy	Isoflurane + N ₂ O	Caudal block	27	Bupivacaine	0.25%	0.75 ml kg ⁻¹		FLACC ≥4	Meperidine IV 0.5 mg kg ⁻¹		
						WI	30	Bupivacaine	0.50%	0.4 ml kg ⁻¹					
						Systemic analgesic	30	Acetaminophen SUPP		20 mg kg ⁻¹					
Al-Zaben 2011	Jordan	I	2 – 12 yr	Unilateral Inguinal Herniotomy	Sevoflurane + N ₂ O	LB-II-IHB	30	Bupivacaine	0.50%	0.25 ml kg ⁻¹		OPS >4	Paracetamol SUPP 30 mg kg ⁻¹	Not specified	Paracetamol PO 15 mg kg ⁻¹
						Systemic analgesic	30	Morphine IV		0.1 mg kg ⁻¹					
Bari 2011	Bangladesh	NM	2 – 18 yr	Unilateral or Bilateral Inguinal Hernia Repair	NM	WI	60	Levobupivacaine	0.25%(<16kg) 0.5%(>16kg)	1.25 mg kg ⁻¹		Poker chip tool ≥2, or VAS ≥4	Paracetamol PO 15 mg kg ⁻¹		
						Systemic analgesic	60	Paracetamol SUPP		30 mg kg ⁻¹					
Tug 2011	Turkey	I – II	3 – 7 yr	Unilateral inguinal hernia repair surgery.	Sevoflurane + N ₂ O	LB-PVB (L2)	35	Levobupivacaine	0.25%	0.2 ml kg ⁻¹		FLACC >2	Tramadol IV		
						Caudal block	35	Levobupivacaine	0.25%	1 ml kg ⁻¹					
Cnar 2009	Turkey	I	2 – 10 yr	Unilateral inguinal hernia repair	Sevoflurane	WI	64	Levobupivacaine	0.50%	0.25 ml kg ⁻¹		Hanallah's OPS ≥4	Paracetamol PO 20 mg kg ⁻¹		
						Control	32								
Khalil 2009	USA	I – II	1 – 6 yr	Elective orchidopexy	Isoflurane + N ₂ O	Caudal block	18	Ropivacaine	0.2%	1.25 ml kg ⁻¹		Hanallah's modified pain score ≥4	Morphine IV 0.1 mg kg ⁻¹		
						Systemic analgesic	18	Fentanyl IV		2 µg kg ⁻¹ , then 1 µg kg ⁻¹					
Weintraud 2009	South Africa	I – II	8 – 84 mon	Inguinal hernia repair	Halothane	UG-II-IHB	35	Ropivacaine	0.50%	0.25 ml kg ⁻¹					
						LB-II-IHB	31	Ropivacaine	0.50%	0.25 ml kg ⁻¹					
Atta 2008	Egypt	I – II	2 – 6 yr	Elective surgery for inguinal hernia repair	Sevoflurane + N ₂ O	UG-II-IHB	30	Bupivacaine	0.25%	0.25 ml kg ⁻¹		OPS ≥4	Paracetamol PO 20 mg kg ⁻¹		
						Caudal block	30	Bupivacaine	0.25%	1 ml kg ⁻¹					
Matsota 2007	Greece	I – II	2 – 12 yr	Unilateral inguinal hernioplasty	Sevoflurane + N ₂ O	WI	15	Levobupivacaine	0.25%(<16kg) 0.5%(>16kg)	1.25 mg kg ⁻¹		Poker chip tool ≥2, or VAS ≥4	Paracetamol PO 15 mg kg ⁻¹		
						Systemic analgesic	15	Paracetamol SUPP		30 mg kg ⁻¹					
Caetano 2006	Brazil	I – II	1 – 5 yr	Elective unilateral inguinal herniorrhaphy	Halothane	Caudal block	29	Ropivacaine	0.2%	1 ml kg ⁻¹		OPS ≥4	Dipyrone PO 25 mg kg ⁻¹		
						LB-II-IHB	29	Ropivacaine	0.2%	0.6 ml kg ⁻¹					
						WI	29	Ropivacaine	0.2%	0.5 ml kg ⁻¹						If still OPS ≥4	Codeine PO 1 mg kg^{-1}
Khosravi 2006	Iran	I – II	2 – 7 yr	Elective day-case surgical repair of unilateral inguinal hernia.	Halothane + N ₂ O	LB-II-IHB	30	Bupivacaine	0.50%	0.25 ml kg ⁻¹				Not specified	Acetaminophen PO 15 mg kg ⁻¹
						Systemic analgesic	30	Tramadol IV		1.5 mg kg ⁻¹					

Aouad 2005	Lebanon	NM	2 – 6 yr	Inguinal hernia repair	Sevoflurane + N ₂ O	Caudal block	22	Bupivacaine	0.25%	1 ml kg ⁻¹		Agitated	Propacetamol IV 30 mg kg ⁻¹		
						Systemic analgesic	22	Fentanyl IV		1 µg kg ⁻¹		Still agitated after propacetamol	Morphine IV 0.1 mg kg ⁻¹		
Samarkandi 2005	Saudi Arabia	I	1 – 10 yr	Elective unilateral inguinal herniotomy	Sevoflurane + N ₂ O	Caudal block	30	Bupivacaine	0.25%	0.75 ml kg ⁻¹		Pain score reached 3	Pethidine IM 1 mg kg ⁻¹ , or Paracetamol SUPP 10–15 mg kg ⁻¹		
						Systemic analgesic	32	Diclofenac SUPP		1 mg kg ⁻¹					
Willschke 2005	Austria	NM	1 mon – 8 yr	Inguinal hernia repair, orchidopexy or hydrocele repair	Halothane	UG-II-IHB	50	Levobupivacaine	0.25%	Until both nerves were surrounded		OPS ≥11	Acetaminophen PO 40 mg kg ⁻¹		
						LB-II-IHB	50	Levobupivacaine	0.25%	0.3 ml kg ⁻¹					
Sakellaris 2004	Greece	I	6 – 10 yr	Unilateral inguinal hernia repair	Sevoflurane	WI	30	Ropivacaine	0.50%	0.25 ml kg ⁻¹		Hanallah's OPS	Paracetamol SUPP PRN		
						Control	15								
Samarkandi 2004	Saudi Arabia	I	1 – 11 yr	Elective unilateral inguinal herniotomy	Sevoflurane + N ₂ O	Caudal block	30	Bupivacaine	0.25%	0.75 ml kg ⁻¹		Pain score reached 3	Pethidine IM 1 mg kg ⁻¹ Paracetamol SUPP 125–500 mg		
						LB-II-IHB	30	Bupivacaine	0.25%	0.25 ml kg ⁻¹					
Shi 2004	Korea	I – II	2 – 8 yr	Unilateral and bilateral inguinal hernia sutures	Sevoflurane + N ₂ O	Caudal block	15	Ropivacaine	0.2%	1 ml kg ⁻¹					
						Systemic analgesic	15	Ketorolac IV		1 mg kg ⁻¹					
						Control	15								
Bhattacharya 2003	India	I – II	1 – 5 yr	Herniotomy and orchidopexy operation	Halothane + N ₂ O	Caudal block	50	Bupivacaine	0.25%	0.4 ml kg ⁻¹		OPS ≥4	Paracetamol PO 15 mg kg ⁻¹		
						Systemic analgesic	50	Diclofenac SUPP		1 mg kg ⁻¹					
Machotta 2003	Germany	I – II	0 – 5 yr	Unilateral inguinal hernia repair	Sevoflurane + N ₂ O	Caudal block	30	Bupivacaine	0.50%	1 ml kg ⁻¹		Hanallah's OPS ≥5 at PACU	Piritramide IV 0.05 mg kg ⁻¹		
						WI	28	Bupivacaine	0.50%	0.2 ml kg ⁻¹						Not specified at ward	Acetaminophen SUPP PRN
Chae 2000	Korea	I – II	3 – 7 yr	Inguinal herniorrhaphy	Enflurane + N ₂ O	WI	20	Bupivacaine	0.25%	0.3 ml kg ⁻¹					
						Systemic analgesic	20	Ketorolac IV		1 mg kg ⁻¹					
Gaitini 1999	Israel	I	1 – 8 yr	Elective ilioinguinal herniorrhaphy	Halothane + N ₂ O	Caudal block	20	Bupivacaine	0.25%	1 ml kg ⁻¹		mCHEOPS 4-5	Fentanyl IV 1 µg kg ⁻¹		
						Systemic analgesic	20	Fentanyl IV		up to 2 µg kg ⁻¹					
Klimscha 1998	Austria	NM	0.5 – 6 yr	Unilateral ambulatory hernia repair	Halothane + N ₂ O	Caudal block	12	Bupivacaine	0.25%	0.75 ml kg ⁻¹		OPS >11	Paracetamol SUPP 15 mg kg ⁻¹	OPS >11	Paracetamol SUPP
						Control	10	Saline		0.75 ml kg ⁻¹					
Anatol 1997	Spain	NM	5 – 12 yr	Groin surgery (Inguinal hernia, hydrocele, undescended testes)	Halothane + N ₂ O	WI	61	Bupivacaine	0.50%	0.4 ml kg ⁻¹		Not specified	Paracetamol 10 mg kg ⁻¹ PRN		
						LB-II-IHB	55	Bupivacaine	0.50%	0.4 ml kg ⁻¹					
Öztekin 1997	Turkey	I – II	6 – 8 yr	Elective unilateral inguinal hernia repair	Halothane + N ₂ O	LB-II-IHB	20	Bupivacaine	0.25%	0.5 ml kg ⁻¹		Hanallah's OPS >5	Additional analgesic		
						Control	20								
Moon 1996	Korea	I – II	3 – 10 yr	Orchiopexy and herniorrhaphy	Enflurane + N ₂ O	Caudal block	20	Bupivacaine	0.125%	0.5 ml kg ⁻¹					
						LB-II-IHB	20	Bupivacaine	0.25%	0.3 ml kg ⁻¹					
Okur 1996	Turkey	NM	1 mon – 2 yr	Unilateral inguinal hernia repair	Halothane + N ₂ O	WI	20	Bupivacaine	0.25%	0.5 ml kg ⁻¹		Hanallah's OPS	Paracetamol SUPP PRN		
						Control	10								
Shenfeld 1995	Israel	NM	5 mon – 11 yr	Elective inguinoscrotal surgery for undescended testis or inguinal hernia	Halothane + N ₂ O	WI	45	Bupivacaine	0.25%	0.25 ml kg ⁻¹		Not specified	Meperidine IM 1 mg kg ⁻¹ PRN		
						Control	45								
Ryhänen 1994	Finland	I	11 mon – 7 yr	Elective herniotomy or orchidopexy	Isoflurane + N ₂ O	Caudal block	57	Bupivacaine	0.25%	1 ml kg ⁻¹		Not specified	Pethidine IV 0.5 mg kg ⁻¹ or IM 1.0 mg kg ⁻¹ PRN		
						Systemic analgesic	70	Diclofenac IM		1 mg kg ⁻¹					
						Control	73								
Chen 1991	Taiwan	I – II	1 – 10 yr	Elective unilateral inguinal herniorrhaphy	Isoflurane + N ₂ O	LB-II-IHB	25	Bupivacaine	0.25%	0.4 ml kg ⁻¹					
						Systemic analgesic	25	Fentanyl IV		1 µg kg ⁻¹					
						Control	25								
Schindler 1991	Australia	I – II	2 mon – 12 yr	Unilateral inguinal herniotomy	Halothane or Isoflurane + N ₂ O	Caudal block	27	Bupivacaine	0.25%	0.7 ml kg ⁻¹		Not specified	Paracetamol PO or Pethidine IM PRN		
						WI	27	Bupivacaine	0.25%	0.7 ml kg ⁻¹					
Casey 1990	USA	I – II	2 – 10 yr	Inguinal hernia repair	Halothane + N ₂ O	LB-II-IHB	30	Bupivacaine	0.25%	0.25 ml kg ⁻¹		OPS ≥6	Fentanyl IV 1–2 µg kg ⁻¹		
						WI	30	Bupivacaine	0.25%	0.25 ml kg ⁻¹					
Moores 1990	UK	NM	1 – 10 yr	Day case inguinal herniotomy	Halothane + N ₂ O	Caudal block	18	Bupivacaine	0.25%	1 ml kg ⁻¹	Paracetamol 120–500 mg				
						Systemic analgesic	20	Diclofenac SUPP		1 mg kg ⁻¹					
Fell 1988	UK	NM	NM	Unilateral inguinal herniotomy as day cases	Halothane + N ₂ O	Caudal block	22	Bupivacaine	0.25%	1 ml kg ⁻¹		Not specified	Aspirin 150–450 mg or Paracetamol 120–500 mg PRN		
						WI	27	Bupivacaine	0.25%	0.5 ml kg ⁻¹					
Hannallah 1987	USA	I – II	18 mon – 12 yr	Elective repair of a unilateral undescended testicle	Halothane + N ₂ O	Caudal block	16	Bupivacaine	0.25%	2.5 ml per yr of age		Hanallah's OPS ≥7	Fentanyl 1–2 µg kg ⁻¹		
						LB-II-IHB	13	Bupivacaine	0.25%	4 – 6 ml					

						Control	15							
Reid 1987	UK	NM	1 – 7 yr	Day-case inguinal herniotomy	Halothane + N ₂ O	LB-II-IHB	27	Bupivacaine	0.25%	0.2 ml kg ⁻¹				
						WI	22	Bupivacaine	0.25%	0.2 ml kg ⁻¹				
Markham 1986	UK	I	1 – 12 yr	Herniotomy, orchidopexy or ligation of patent processus vaginalis	Halothane + N ₂ O	Caudal block	26	Bupivacaine	0.50%	1 ml per yr of age + 2 ml	Not specified	Diamorphine 0.1 mg kg ⁻¹ PRN		
						LB-II-IHB	26	Bupivacaine	0.50%	0.5 ml per yr of age				
Tsai 1986	Taiwan	I – II	2 – 7 yr	Inguinal herniorrhaphy	Halothane + N ₂ O	Caudal block	50	Bupivacaine	0.25%	0.1 ml per yr per seg				
						LB-II-IHB	50	Bupivacaine	0.25%	1–2 ml kg ⁻¹				
						Control	50							
Smith 1982	UK	NM	1 – 10 yr	Inguinal herniotomy	Halothane + N ₂ O	LB-II-IHB	58	Bupivacaine	0.50%	0.5 ml per yr of age	Not specified	Paracetamol PRN		
						Control	49							

APDS, All India Institute of Medical Science Pain Discomfort Scale; BPRS, Behavioral Pain Rating Scale; CHEOPS, Children's Hospital of Eastern Ontario Pain Scale; CHIPPS, Children's and Infants' Postoperative Pain Scale; FLACC, Face, Legs, Activity, Cry, Consolability; mCHEOPS, modified Children's Hospital of Eastern Ontario Pain Scale; OPS, Objective Pain Score; VAS, Visual Analogue Scale; POAS, Pediatric Objective Pain Scale

- a. Control: comparison group that received only the standard care of the corresponding intervention group.
b. Systemic analgesia: comparison group that received additional systemic analgesic to the standard care of the corresponding intervention group.

Section 3. Risk of bias 2 quality assessment of the primary and secondary outcomes

Author/Year	Bias due to					Overall bias
	Randomization process	Deviations from intended interventions	Missing outcome data	Measurement of the outcome	Selection of the reported results	
Time to the first rescue analgesic after surgery						
Priyadarshini 2022	Low	Low	Low	Low	Low	Low
Genc 2020	Some concerns ^a	Low	Low	Low	Low	Some concerns
Kodali 2020	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Kumar 2020	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Samerchua 2020	Low	Low	Low	Low	Low	Low
İpek 2019	Some concerns ^a	Low	Low	Low	Low	Some concerns
Ayshvarya 2018	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Elbahrawy 2016	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Gavrilovska-Brzanov 2016	Some concerns ^a	Low	Low	Low	Low	Some concerns
Sethi 2016	Low	Low	Low	Low	Low	Low
Kanojia 2015	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Al-Zaben 2014	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Akinyemi 2013	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Sahin 2013	Low	Low	Low	Low	Low	Low
Abdellatif 2012	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Hosseini Jahromi 2012	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Al-Zaben 2011	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Bari 2011	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Cnar 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Atta 2008	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Matsota 2007	Low	Low	Low	Low	Some concerns ^c	Some concerns
Caetano 2006	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Samarkandi 2005	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Samarkandi 2004	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Klimscha 1998	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Shenfeld 1995	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Ryhanen 1994	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Number of patients requiring rescue analgesics after surgery						
Kodali 2020	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Öksüz 2020	Some concerns ^a	Low	Low	Low	Low	Some concerns
Samerchua 2020	Low	Low	Low	Low	Low	Low
Ahmad 2019	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
İpek 2019	Some concerns ^a	Low	Low	Low	Low	Some concerns
Ayshvarya 2018	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Öksüz 2017	Low	Low	Low	Low	Some concerns ^c	Some concerns
Elbahrawy 2016	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Gavrilovska-Brzanov 2016	Some concerns ^a	Low	Low	Low	Low	Some concerns
Kendigelen 2016	Low	Low	Low	Low	Low	Low
Sethi 2016	Low	Low	Low	Low	Low	Low
Toker 2016	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Yang 2016	Low	Low	Low	Low	Some concerns ^c	Some concerns
Park 2014	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Sahin 2013	Low	Low	Low	Low	Low	Low
Abdellatif 2012	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Hosseini Jahromi 2012	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Khalil 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Cnar 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Caetano 2006	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Aouad 2005	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Samarkandi 2005	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Willschke 2005	Low	Low	Low	Low	Some concerns ^c	Some concerns
Samarkandi 2004	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Bhattacharya 2003	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns

Gaitini 1999	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Anatol 1997	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Shenfeld 1995	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Ryhanen 1994	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Schindler 1991	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Moores 1990	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Casey 1990	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Reid 1987	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Number of patients requiring opioid rescue analgesics during the hospital stay						
Priyadarshini 2022	Low	Low	Low	Low	Low	Low
Genc 2020	Some concerns ^a	Low	Low	Low	Low	Some concerns
Samerchua 2020	Low	Low	Low	Low	Low	Low
Ayshvarya 2018	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Elbahrawy 2016	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Gavrilovska-Brzanov 2016	Some concerns ^a	Low	Low	Low	Low	Some concerns
Kendigelen 2016	Low	Low	Low	Low	Low	Low
Sethi 2016	Low	Low	Low	Low	Low	Low
Yang 2016	Low	Low	Low	Low	Some concerns ^c	Some concerns
Park 2014	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Sahin 2013	Low	Low	Low	Low	Low	Low
Hosseini Jahromi 2012	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Khalil 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Aouad 2005	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Machotta 2003	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Gaitini 1999	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Shenfeld 1995	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Schindler 1991	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Casey 1990	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Markham 1986	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Postoperative pain score at 0–2h						
Benka 2020	Low	Low	Low	Low	Some concerns ^c	Some concerns
Kodali 2020	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Ahmad 2019	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Öksüz 2017	Low	Low	Low	Low	Some concerns ^c	Some concerns
Gavrilovska-Brzanov 2016	Some concerns ^a	Low	Low	Low	Low	Some concerns
Sethi 2016	Low	Low	Low	Low	Low	Low
Toker 2016	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Al-Zaben 2014	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Park 2014	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Al-Zaben 2011	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Cnar 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Khosravi 2006	Low	Low	Low	Low	Low	Low
Sakellaris 2004	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Shi 2004	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Chae 2000	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Gaitini 1999	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Moon 1996	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Okur 1996	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Chen 1991	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Reid 1987	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Postoperative pain score at 4–6h						
Benka 2020	Low	Low	Low	Low	Some concerns ^c	Some concerns
Kodali 2020	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Ahmad 2019	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Öksüz 2017	Low	Low	Low	Low	Some concerns ^c	Some concerns
Sethi 2016	Low	Low	Low	Low	Low	Low
Toker 2016	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Kanojia 2015	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Al-Zaben 2014	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns

Park 2014	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Al-Zaben 2011	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Cnar 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Chae 2000	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Moon 1996	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Postoperative pain score at 8–12h						
Kodali 2020	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Öksüz 2017	Low	Low	Low	Low	Some concerns ^c	Some concerns
Sethi 2016	Low	Low	Low	Low	Low	Low
Toker 2016	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Shenfeld 1995	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Postoperative pain score at 24h						
Kodali 2020	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Öksüz 2017	Low	Low	Low	Low	Some concerns ^c	Some concerns
Sethi 2016	Low	Low	Low	Low	Low	Low
Park 2014	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Cnar 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Postoperative nausea and vomiting during the hospital stay and at home						
Benka 2020	Low	Low	Low	Low	Some concerns ^c	Some concerns
Kumar 2020	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Öksüz 2020	Some concerns ^a	Low	Low	Low	Low	Some concerns
Ayshvarya 2018	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Öksüz 2017	Low	Low	Low	Low	Some concerns ^c	Some concerns
Abu Elyazed 2016	Low	Low	Low	Low	Low	Low
Elbahrawy 2016	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Gavrilovska-Brzanov 2016	Some concerns ^a	Low	Low	Low	Low	Some concerns
Kendigelen 2016	Low	Low	Low	Low	Low	Low
Ohashi 2016	Low	Low	Low	Low	Low	Low
Sethi 2016	Low	Low	Low	Low	Low	Low
Yang 2016	Low	Low	Low	Low	Some concerns ^c	Some concerns
Al-Zaben 2014	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Akinyemi 2013	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Sahin 2013	Low	Low	Low	Low	Low	Low
Abdellatif 2012	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Hosseini Jahromi 2012	Some concerns ^a	Low	Low	Some concerns ^b	Low	Some concerns
Al-Zaben 2011	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Cnar 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Khalil 2009	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Caetano 2006	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Khosravi 2006	Low	Low	Low	Low	Low	Low
Bhattacharya 2003	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Anatol 1997	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Shenfeld 1995	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Chen 1991	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
Schindler 1991	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Moore 1990	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Fell 1988	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Reid 1987	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Markham 1986	Some concerns ^a	Low	Low	Low	Some concerns ^c	Some concerns
Tsai 1986	Some concerns ^a	Low	Low	Some concerns ^b	Some concerns ^c	High
a. No information about the allocation sequence, but no baseline imbalance was observed.						
b. Measurements of outcome do not differ between groups, but the outcome assessors were might be aware of the intervention received.						
c. No information about the pre-determined trial protocol.						

Section 4. Confidence in Network Meta-Analysis Rating of the primary and secondary outcomes.

Comparison	Number of studies	Within-study bias	Reporting bias	Indirectness	Imprecision	Heterogeneity	Incoherence	Confidence rating
Time to the first rescue analgesic after surgery								
Caudal: Control	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: LB II-IHB	1	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Caudal: QLB	1	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Caudal: Systemic analgesia	4	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Caudal: TAPB	7	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
Caudal: UG II-IHB	2	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Caudal: WI	3	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Control: Systemic analgesia	1	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
Control: WI	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
LB II-IHB: Systemic analgesia	2	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
QLB: Systemic analgesia	1	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
QLB: TAPB	2	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Some concerns	Very low
QLB: UG II-IHB	2	No concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Moderate
Systemic analgesia: WI	3	Some concerns	Low risk	No concerns	No concerns	Major concerns	Major concerns	Very low
TAPB: UG II-IHB	1	No concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low
TAPB: WI	1	Some concerns	Low risk	No concerns	No concerns	Some concerns	Some concerns	Very low
Control: LB II-IHB	0	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low
Control: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
Control: TAPB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
Control: UG II-IHB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
LB II-IHB: UG II-IHB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
LB II-IHB: WI	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
QLB: WI	0	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
Systemic analgesia: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Systemic analgesia: UG II-IHB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
UG II-IHB: WI	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Number of patients requiring rescue analgesics after surgery								
Caudal: Systemic analgesia	8	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
Caudal: Control	1	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: LB II-IHB	3	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Caudal: QLB	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: TAPB	6	Some concerns	Low risk	No concerns	No concerns	Major concerns	Some concerns	Very low
Caudal: WI	5	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Systemic analgesia: Control	1	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Systemic analgesia: WI	2	Some concerns	Low risk	No concerns	Major concerns	No concerns	Some concerns	Very low
Control: LB II-IHB	1	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
Control: WI	3	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
LB II-IHB: UG II-IHB	1	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
LB II-IHB: WI	6	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
UG II-IHB: QLB	1	No concerns	Low risk	Some concerns	Major concerns	No concerns	No concerns	Very low
QLB: TAPB	2	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
TAPB: WI	2	Some concerns	Low risk	No concerns	No concerns	No concerns	Some concerns	Low
Caudal: UG II-IHB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Systemic analgesia: LB II-IHB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Systemic analgesia: UG II-IHB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Systemic analgesia: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Systemic analgesia: TAPB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Control: UG II-IHB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Control: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Control: TAPB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
UG II-IHB: TAPB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low

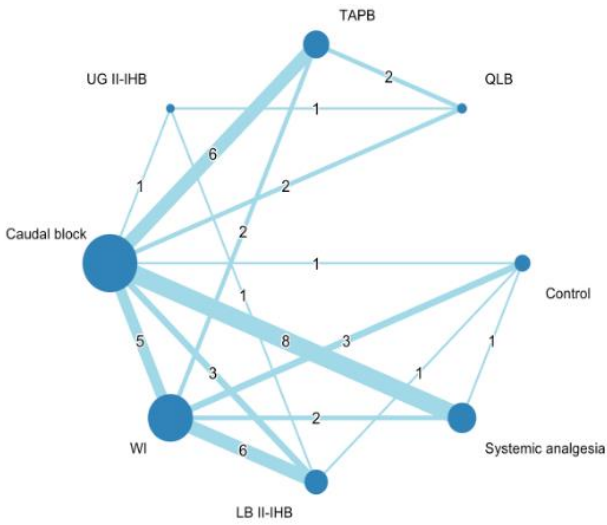
UG II-IHB: WI	0	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Very low
QLB: WI	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Number of patients requiring opioid rescue analgesics during the hospital stay								
Caudal: Systemic analgesia	4	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Caudal block: LB II-IHB	1	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Caudal: TAPB	4	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Caudal block: WI	4	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Systemic analgesia: QLB	1	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low
Systemic analgesia: WI	1	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Control: LB II-IHB	1	Major concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Control: WI	2	Major concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
LB II-IHB: WI	2	Major concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
UG II-IHB: QLB	2	No concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
UG II-IHB: TAPB	1	No concerns	Low risk	No concerns	Major concerns	No concerns	Some concerns	Very low
QLB: TAPB	1	No concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Low
TAPB: WI	2	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low
Caudal: Control	0	Some concerns	Low risk	No concerns	No concerns	Major concerns	Major concerns	Very low
Caudal: UG II-IHB	0	No concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Caudal: QLB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Systemic analgesia: Control	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Systemic analgesia: LB II-IHB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Systemic analgesia: UG II-IHB	0	No concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Systemic analgesia: TAP	0	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low
Control: UG II-IHB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Control: QLB	0	Some concerns	Low risk	No concerns	No concerns	Major concerns	Major concerns	Very low
Control: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Major concerns	Major concerns	Very low
LB II-IHB: UG II-IHB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
UG II-IHB: WI	0	No concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
QLB: WI	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low
Postoperative pain score at 0–2 h								
Caudal: Control	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: LB II-IHB	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: Systemic analgesia	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: TAPB	2	Major concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Low
Caudal: WI	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Control: LB II-IHB	2	Major concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Very low
Control: Systemic analgesia	2	Major concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Very low
Control: WI	4	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
LB II-IHB: Systemic analgesia	4	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
LB II-IHB: WI	3	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
QLB: TAPB	1	Some concerns	Low risk	Some concerns	No concerns	Some concerns	No concerns	Very low
Systemic analgesia: WI	2	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Caudal: QLB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Control: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Control: TAPB	0	Major concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Low
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
QLB: Systemic analgesia	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
QLB: WI	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Systemic analgesia: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
TAPB: WI	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Postoperative pain score at 4–6 h								
Caudal: Control	1	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
Caudal: LB II-IHB	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	Some concerns	Very low
Caudal: TAPB	3	Major concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Caudal: WI	1	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Control: LB II-IHB	1	Major concerns	Low risk	No concerns	No concerns	Some concerns	Some concerns	Very low

Control: WI	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
LB II-IHB: Systemic analgesia	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
LB II-IHB: WI	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
QLB: TAPB	1	Some concerns	Low risk	Some concerns	No concerns	Major concerns	Major concerns	Very low
Systemic analgesia: WI	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Caudal: QLB	0	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low
Caudal: Systemic analgesia	0	Some concerns	Low risk	No concerns	Some concerns	No concerns	Major concerns	Very low
Control: QLB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Control: Systemic analgesia	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Control: TAPB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	Some concerns	No concerns	Major concerns	Very low
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
QLB: Systemic analgesia	0	Some concerns	Low risk	No concerns	Some concerns	No concerns	Major concerns	Very low
QLB: WI	0	Some concerns	Low risk	No concerns	Some concerns	No concerns	Major concerns	Very low
Systemic analgesia: TAPB	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
TAPB: WI	0	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low
Postoperative pain score at 8–12 h								
Caudal: LB II-IHB	1	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Caudal: TAPB	2	Major concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Caudal: WI	1	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Control: WI	1	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
LB II-IHB: WI	1	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
QLB: TAPB	1	Some concerns	Low risk	Some concerns	Not applicable	Not applicable	Not applicable	Not applicable
Caudal: Control	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Caudal: QLB	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Control: LB II-IHB	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Control: QLB	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Control: TAPB	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
QLB: WI	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
TAPB: WI	0	Some concerns	Low risk	No concerns	Not applicable	Not applicable	Not applicable	Not applicable
Postoperative nausea and vomiting during the hospital stay and at home								
Caudal: Control	2	Some concerns	Low risk	No concerns	Some concerns	No concerns	No concerns	Low
Caudal: LB II-IHB	3	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Caudal: UG II-IHB	1	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Caudal: QLB	1	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Caudal: Systemic opioids	5	Some concerns	Low risk	No concerns	No concerns	Some concerns	Some concerns	Very low
Caudal: TAPB	5	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
Caudal: WI	5	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
Control: LB II-IHB	2	Major concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Very low
Control: UG II-IHB	1	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Control: Systemic opioids	1	Major concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Control: TAPB	1	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate
Control: WI	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
LB II-IHB: Systemic opioids	4	Some concerns	Low risk	No concerns	No concerns	No concerns	Some concerns	Low
LB II-IHB: WI	3	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Very low
QLB: TAPB	1	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Systemic opioids: WI	1	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Low
TAPB: WI	2	Some concerns	Low risk	No concerns	Some concerns	No concerns	Some concerns	Very low
Control: QLB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
LB II-IHB: UG II-IHB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
LB II-IHB: QLB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
LB II-IHB: TAPB	0	Some concerns	Low risk	No concerns	Some concerns	No concerns	No concerns	Low
UG II-IHB: QLB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
UG II-IHB: Systemic opioids	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
UG II-IHB: TAPB	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
UG II-IHB: WI	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
QLB: Systemic opioids	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low

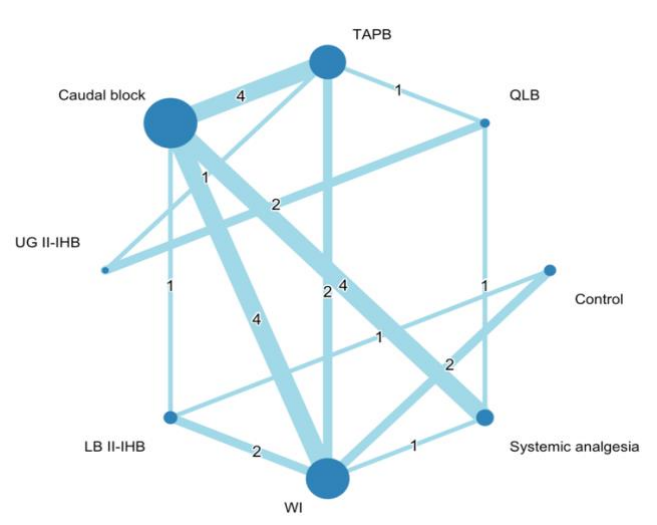
QLB: WI	0	Some concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Very low
Systemic opioids: TAPB	0	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate

Section 5. Network plots of the secondary outcomes

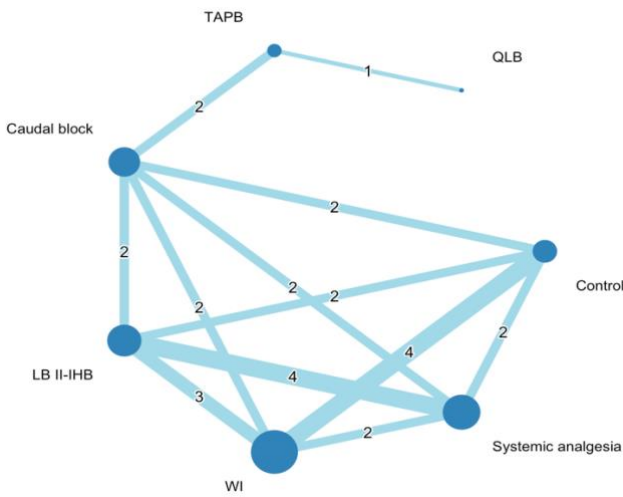
Number of patients requiring rescue analgesics after surgery



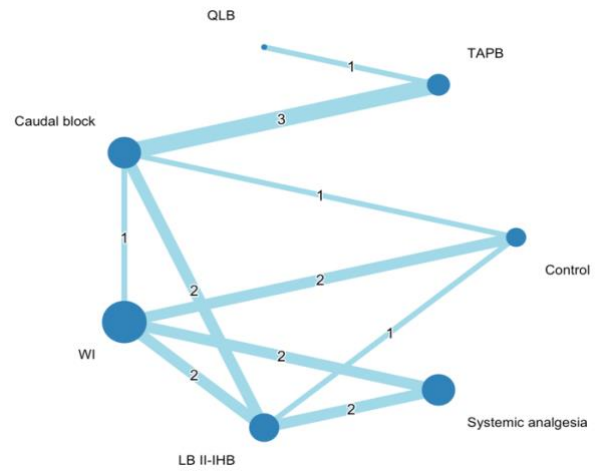
Number of patients requiring opioid rescue analgesics during the hospital stay



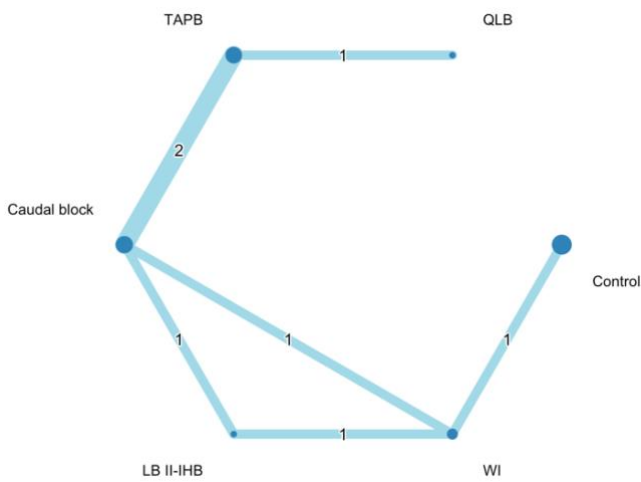
Postoperative pain score at 4–6 h



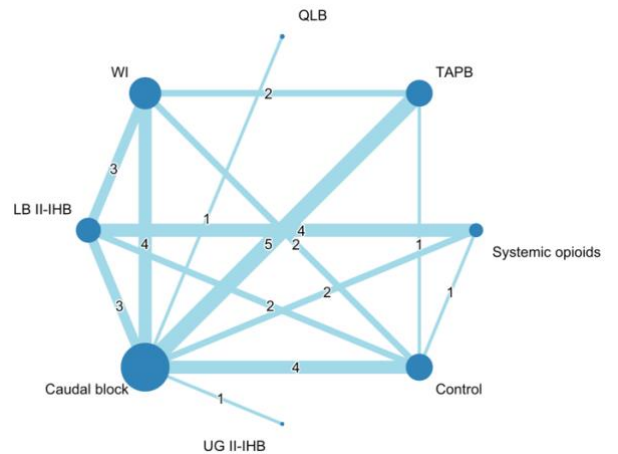
Postoperative pain score at 8–12 h



Postoperative pain score at 24 h



Postoperative nausea and vomiting during the hospital stay and at home



Section 6. Network league table of the secondary outcomes

Number of patients requiring opioid rescue analgesics during the hospital stay

[Odds ratio (95% Confidence interval)]

QLB							
0.76 (0.10, 5.78)	TAPB						
0.48 (0.06, 4.05)	0.64 (0.18, 2.30)	Caudal block					
0.42 (0.06, 2.81)	0.56 (0.06, 5.29)	0.88 (0.08, 9.83)	UG II-IHB				
0.33 (0.02, 5.58)	0.43 (0.04, 4.16)	0.67 (0.09, 4.99)	0.77 (0.04, 16.36)	LB II-IHB			
0.21 (0.02, 2.11)	0.28 (0.06, 1.30)	0.44 (0.14, 1.40)	0.50 (0.04, 6.49)	0.65 (0.11, 3.96)	WI		
0.14 (0.02, 1.19)	0.19 (0.03, 1.04)	0.30 (0.08, 1.11)	0.34 (0.03, 4.08)	0.44 (0.04, 4.46)	0.68 (0.14, 3.37)	Systemic analgesia	
0.04 (0.00, 0.79)	0.06 (0.01, 0.60)	0.09 (0.01, 0.74)	0.10 (0.00, 2.31)	0.14 (0.02, 1.14)	0.21 (0.04, 1.24)	0.31 (0.03, 3.24)	Control

Postoperative pain score at 0–2 h [Standardised mean difference (95% Confidence interval)]

QLB							
-0.79 (-1.89, 0.31)	TAPB						
-1.39 (-2.72, -0.05)	-0.60 (-1.36, 0.16)	Caudal block					
-1.84 (-3.27, -0.40)	-1.05 (-1.97, -0.13)	-0.45 (-0.97, 0.07)	LB II-IHB				
-1.97 (-3.40, -0.54)	-1.18 (-2.10, -0.27)	-0.58 (-1.10, -0.07)	-0.13 (-0.59, 0.32)	WI			
-2.03 (-3.46, -0.59)	-1.24 (-2.16, -0.31)	-0.64 (-1.17, -0.11)	-0.19 (-0.62, 0.24)	-0.05 (-0.52, 0.41)	Systemic analgesia		
-3.16 (-4.60, -1.71)	-2.37 (-3.30, -1.43)	-1.77 (-2.32, -1.22)	-1.32 (-1.83, -0.81)	-1.19 (-1.64, -0.73)	-1.13 (-1.65, -0.61)	Control	

Postoperative pain score at 4–6 h [Standardised mean difference (95% Confidence interval)]

TAPB						
0.17 (-1.43, 1.77)	QLB					
-0.52 (-1.45, 0.40)	-0.69 (-2.54, 1.16)	Caudal block				
-1.42 (-2.85, 0.00)	-1.59 (-3.73, 0.55)	-0.90 (-1.99, 0.18)	WI			
-1.42 (-2.78, -0.06)	-1.59 (-3.69, 0.51)	-0.90 (-1.90, 0.10)	0.00 (-0.86, 0.87)	LB II-IHB		
-1.58 (-3.12, -0.04)	-1.75 (-3.97, 0.47)	-1.06 (-2.29, 0.17)	-0.16 (-1.06, 0.74)	-0.16 (-1.06, 0.74)	Systemic analgesia	
-3.00 (-4.49, -1.51)	-3.16 (-5.35, -0.98)	-2.47 (-3.64, -1.30)	-1.57 (-2.55, -0.59)	-1.57 (-2.65, -0.50)	-1.41 (-2.64, -0.19)	Control

Postoperative pain score at 8–12 h [Standardised mean difference (95% Confidence interval)]

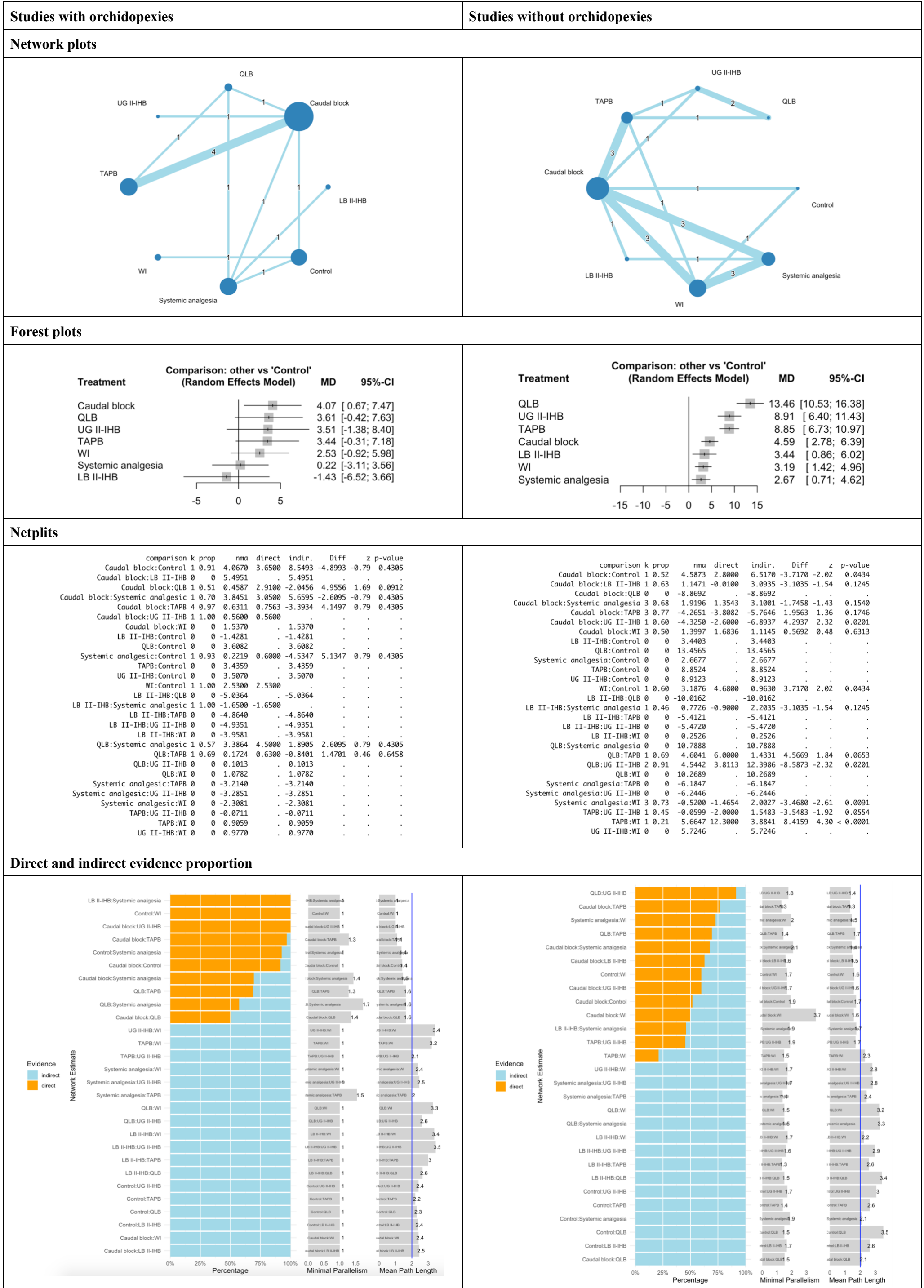
QLB					
-0.72 (-1.72, 0.28)	TAPB				
-1.12 (-2.70, 0.46)	-0.40 (-1.61, 0.82)	LB II-IHB			
-1.25 (-2.47, -0.02)	-0.53 (-1.23, 0.18)	-0.13 (-1.12, 0.86)	Caudal block		
-1.56 (-3.14, 0.01)	-0.84 (-2.06, 0.38)	-0.44 (-1.44, 0.55)	-0.31 (-1.31, 0.68)	WI	
-8.94 (-11.06, -6.82)	-8.21 (-10.08, -6.35)	-7.82 (-9.55, -6.09)	-7.69 (-9.42, -5.96)	-7.37 (-8.79, -5.96)	Control

Postoperative nausea and vomiting during the hospital stay and at home

[Odds ratio (95% Confidence interval)]

TAPB							
1.76 (0.06, 52.02)	QLB						
0.54 (0.24, 1.22)	0.31 (0.01, 9.30)	WI					
0.53 (0.22, 1.29)	0.30 (0.01, 9.21)	0.98 (0.50, 1.91)	LB II-IHB				
0.52 (0.29, 0.95)	0.30 (0.01, 8.34)	0.96 (0.49, 1.87)	0.98 (0.47, 2.02)	Caudal block			
0.24 (0.02, 3.39)	0.14 (0.00, 9.23)	0.44 (0.03, 6.33)	0.45 (0.03, 6.56)	0.46 (0.03, 6.07)	UG II-IHB		
0.28 (0.12, 0.67)	0.16 (0.01, 4.88)	0.52 (0.24, 1.14)	0.53 (0.24, 1.18)	0.54 (0.26, 1.11)	1.19 (0.08, 17.42)	Control	
0.13 (0.05, 0.37)	0.07 (0.00, 2.35)	0.24 (0.09, 0.61)	0.24 (0.11, 0.53)	0.25 (0.10, 0.62)	0.55 (0.04, 8.50)	0.46 (0.17, 1.22)	Systemic opioids

Section 7. Summary of the sensitivity analysis on the primary outcome based on studies with or without orchidopexies.

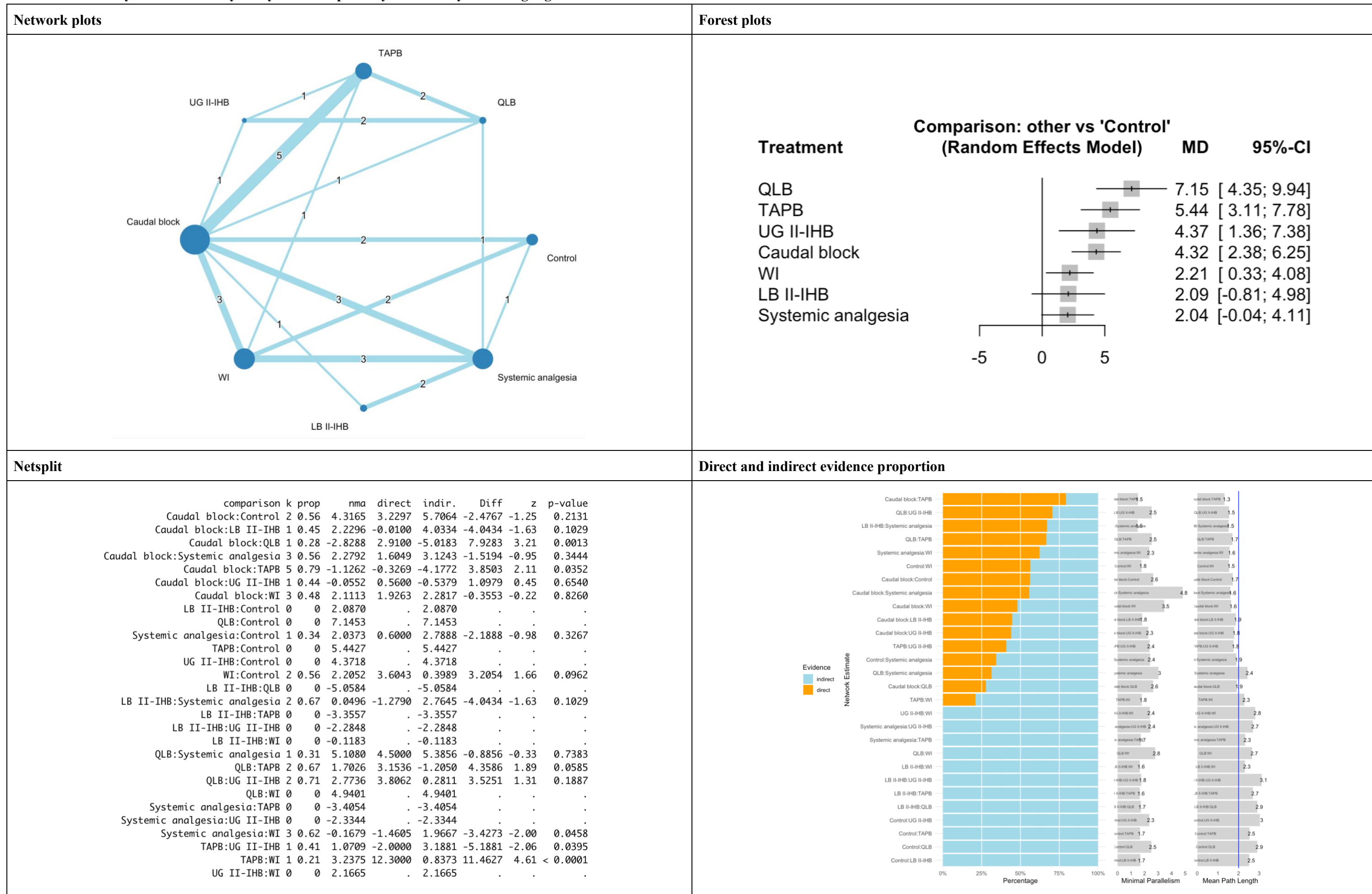


Studies with orchidopexies (hours) [MD (CI)]	Caudal block							
	0.46 (-2.42, 3.33)	QLB						
	0.56 (-2.95, 4.07)	0.10 (-4.44, 4.64)	UG II-IHB					
	0.63 (-1.13, 2.40)	0.17 (-2.73, 3.08)	0.07 (-3.86, 4.00)	TAPB				
	1.54 (-3.30, 6.38)	1.08 (-4.22, 6.38)	0.98 (-5.00, 6.96)	0.91 (-4.18, 5.99)	WI			
	3.85 (0.86, 6.83)	3.39 (0.18, 6.60)	3.29 (-1.33, 7.90)	3.21 (-0.07, 6.50)	2.31 (-2.49, 7.10)	Systemic analgesia		
	4.07 (0.67, 7.47)	3.61 (-0.42, 7.63)	3.51 (-1.38, 8.40)	3.44 (-0.31, 7.18)	2.53 (-0.92, 5.98)	0.22 (-3.11, 3.56)	Control	
	5.50 (0.63, 10.36)	5.04 (0.03, 10.04)	4.94 (-1.07, 10.94)	4.86 (-0.19, 9.92)	3.96 (-2.19, 10.10)	1.65 (-2.20, 5.50)	1.43 (-3.66, 6.52)	LB II-IHB
Studies without orchidopexies (inguinal hernia repair only) (hours) [MD (CI)]	QLB							
	4.54 (2.52, 6.57)	UG II-IHB						
	4.60 (2.37, 6.84)	0.06 (-1.75, 1.87)	TAPB					
	8.87 (6.54, 11.20)	4.32 (2.55, 6.10)	4.27 (3.07, 5.46)	Caudal block				
	10.02 (7.00, 13.03)	5.47 (2.87, 8.08)	5.41 (3.17, 7.65)	1.15 (-0.77, 3.06)	LB II-IHB			
	10.27 (7.70, 12.83)	5.72 (3.64, 7.81)	5.66 (4.10, 7.23)	1.40 (0.24, 2.56)	0.25 (-1.87, 2.37)	WI		
	10.79 (8.22, 13.36)	6.24 (4.16, 8.33)	6.18 (4.59, 7.78)	1.92 (0.80, 3.04)	0.77 (-1.20, 2.75)	0.52 (-0.64, 1.68)	Systemic analgesia	
	13.46 (10.53, 16.38)	8.91 (6.40, 11.43)	8.85 (6.73, 10.97)	4.59 (2.78, 6.39)	3.44 (0.86, 6.02)	3.19 (1.42, 4.96)	2.67 (0.71, 4.62)	Control

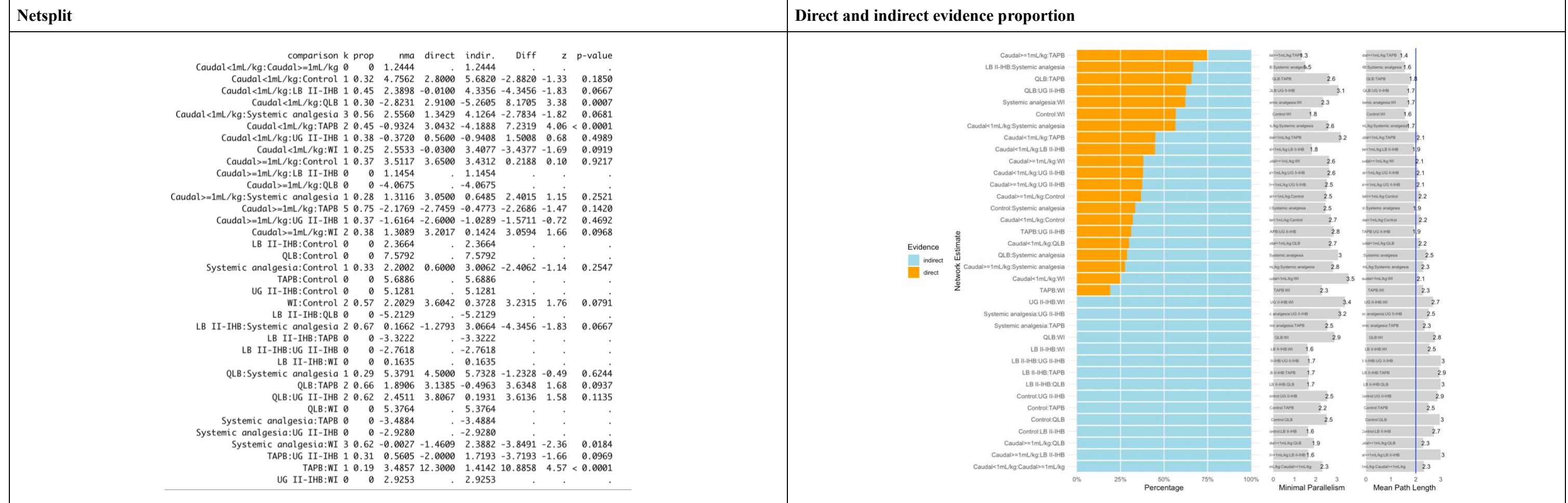
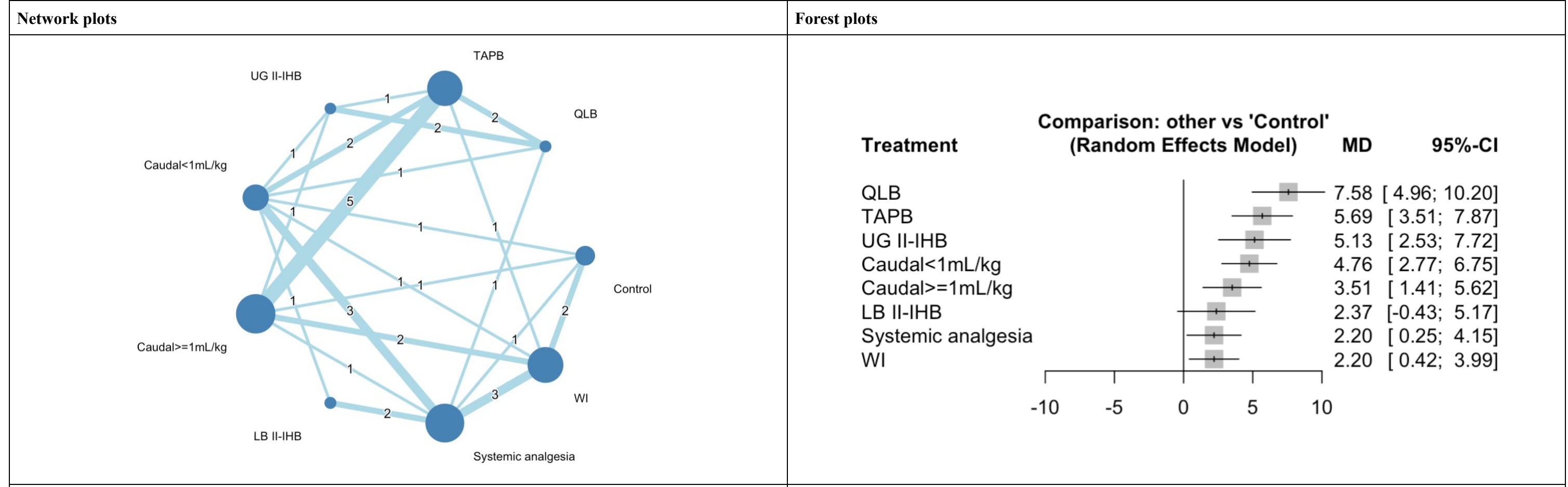
CI, confidence interval; II-IHB, ilioinguinal-iliohypogastric block; LB, landmark-based; MD, mean difference; OR, odds ratio; QLB, quadratus lumborum block; TAPB, transversus abdominis plane block; UG, ultrasound-guided; WI, wound infiltration.

- Control: comparison group that received only the standard care of the corresponding intervention group.
- Systemic analgesia: comparison group that received additional systemic analgesic to the standard care of the corresponding intervention group.
- The statistically significant results are in bold type.

Section 8. Summary of the sensitivity analysis on the primary outcome by excluding high risk of bias studies



Section 9. Summary of the subgroup analysis on the primary outcome based on the volume of caudal block



Postoperative pain score at 4–6 h								Postoperative pain score at 8–12 h									
comparison	k	prop	nma	direct	indir.	Diff	z	p-value	comparison	k	prop	nma	direct	indir.	Diff	z	p-value
Caudal block:Control	1	0.41	-2.4738	-5.1597	-0.6196	-4.5400	-3.74	0.0002	Caudal block:Control	0	0	-7.6875	.	-7.6875	.	.	.
Caudal block:LB II-IHB	2	0.76	-0.9006	-0.1476	-3.3487	3.2010	2.67	0.0076	Caudal block:LB II-IHB	1	1.00	0.1305	0.1305	.	.	.	.
Caudal block:QLB	0	0	0.6889	.	0.6889	.	.	.	Caudal block:QLB	0	0	1.2491	.	1.2491	.	.	.
Caudal block:Systemic analgesia	0	0	-1.0613	.	-1.0613	.	.	.	Caudal block:TAPB	2	1.00	0.5265	0.5265	.	.	.	.
Caudal block:TAPB	3	1.00	0.5225	0.5225	.	.	.	.	Caudal block:WI	1	1.00	-0.3131	-0.3131	.	.	.	.
Caudal block:WI	1	0.46	-0.9016	0.4436	-2.0517	2.4953	2.24	0.0248	LB II-IHB:Control	0	0	-7.8180	.	-7.8180	.	.	.
LB II-IHB:Control	1	0.46	-1.5732	-0.4336	-2.5562	2.1226	1.92	0.0542	QLB:Control	0	0	-8.9366	.	-8.9366	.	.	.
QLB:Control	0	0	-3.1627	.	-3.1627	.	.	.	TAPB:Control	0	0	-8.2140	.	-8.2140	.	.	.
Systemic analgesia:Control	0	0	-1.4125	.	-1.4125	.	.	.	WI:Control	1	1.00	-7.3744	-7.3744	.	.	.	.
TAPB:Control	0	0	-2.9963	.	-2.9963	.	.	.	LB II-IHB:QLB	0	0	1.1186	.	1.1186	.	.	.
WI:Control	2	0.77	-1.5722	-0.7260	-4.4661	3.7402	3.13	0.0017	LB II-IHB:TAPB	0	0	0.3960	.	0.3960	.	.	.
LB II-IHB:QLB	0	0	1.5895	.	1.5895	.	.	.	LB II-IHB:WI	1	1.00	-0.4436	-0.4436	.	.	.	.
LB II-IHB:Systemic analgesia	2	0.65	-0.1607	-0.0088	-0.4435	0.4347	0.45	0.6515	QLB:TAPB	1	1.00	-0.7226	-0.7226	.	.	.	.
LB II-IHB:TAPB	0	0	1.4232	.	1.4232	.	.	.	QLB:WI	0	0	-1.5622	.	-1.5622	.	.	.
LB II-IHB:WI	2	0.59	-0.0010	0.0473	-0.0707	0.1180	0.13	0.8954	TAPB:WI	0	0	-0.8396	.	-0.8396	.	.	.
QLB:Systemic analgesia	0	0	-1.7502	.	-1.7502	.	.	.									
QLB:TAPB	1	1.00	-0.1664	-0.1664	.	.	.	.					
QLB:WI	0	0	-1.5905	.	-1.5905	.	.	.									
Systemic analgesia:TAPB	0	0	1.5838	.	1.5838	.	.	.									
Systemic analgesia:WI	2	0.65	0.1597	0.3118	-0.1229	0.4347	0.45	0.6515									
TAPB:WI	0	0	-1.4242	.	-1.4242	.	.	.									

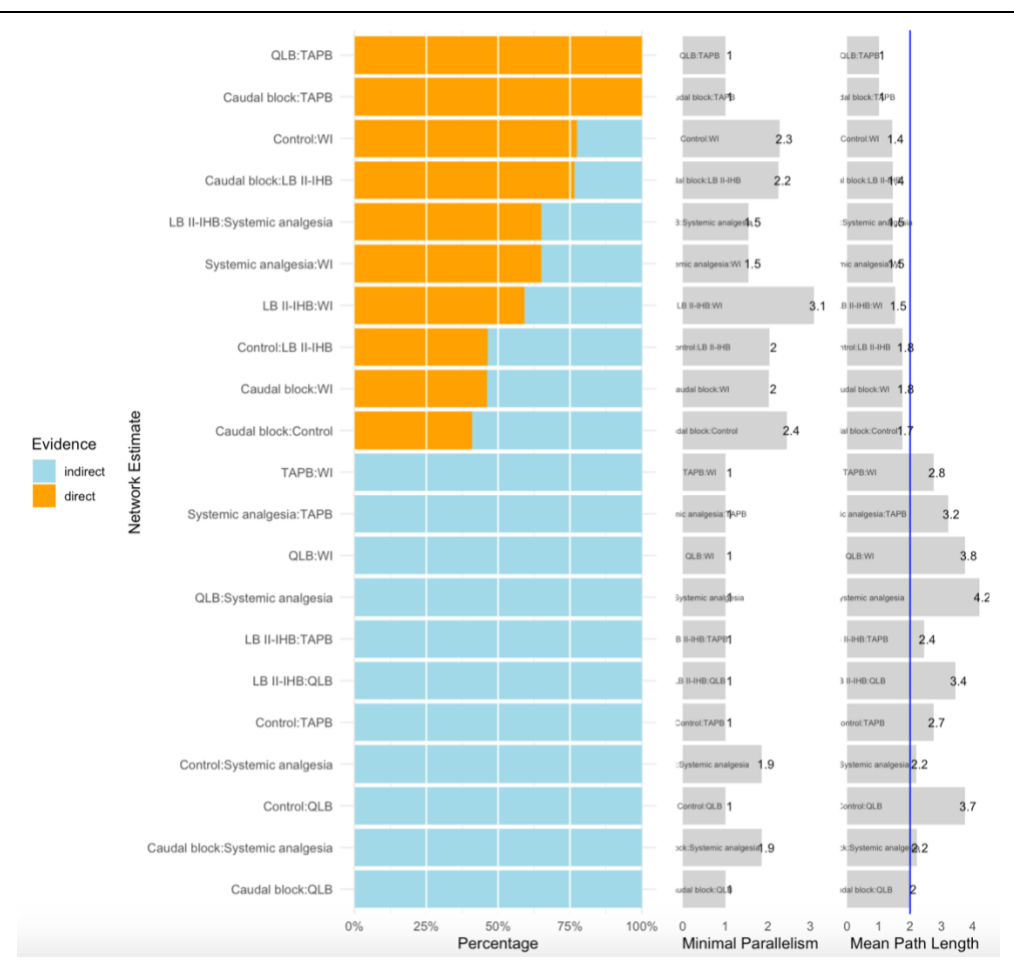
Postoperative nausea and vomiting during the hospital stay and at home

comparison	k	prop	nma	direct	indir.	RoR	z	p-value
Caudal block:Control	4	0.54	0.5422	0.9658	0.2751	3.5103	1.70	0.0888
Caudal block:LB II-IHB	3	0.40	1.0222	0.7085	1.3098	0.5409	-0.82	0.4144
Caudal block:QLB	1	1.00	3.3673	3.3673	.	.	.	.
Caudal block:Systemic opioids	2	0.30	0.2497	0.3330	0.2213	1.5048	0.40	0.6896
Caudal block:TAPB	5	0.81	1.9172	1.6936	3.2665	0.5185	-0.84	0.4012
Caudal block:UG II-IHB	1	1.00	0.4565	0.4565	.	.	.	.
Caudal block:WI	4	0.46	1.0441	0.7900	1.3249	0.5962	-0.76	0.4502
Control:LB II-IHB	2	0.45	1.8855	2.1341	1.7019	1.2540	0.28	0.7818
Control:QLB	0	0	6.2110	.	6.2110	.	.	.
Control:Systemic opioids	1	0.33	0.4605	1.0000	0.3153	3.1714	1.09	0.2736
Control:TAPB	1	0.18	3.5363	1.5556	4.2485	0.3661	-0.88	0.3770
Control:UG II-IHB	0	0	0.8420	.	0.8420	.	.	.
Control:WI	2	0.32	1.9258	5.7656	1.1597	4.9716	1.86	0.0627
LB II-IHB:QLB	0	0	3.2942	.	3.2942	.	.	.
LB II-IHB:Systemic opioids	4	0.79	0.2443	0.2139	0.4058	0.5272	-0.65	0.5137
LB II-IHB:TAPB	0	0	1.8756	.	1.8756	.	.	.
LB II-IHB:UG II-IHB	0	0	0.4466	.	0.4466	.	.	.
LB II-IHB:WI	3	0.65	1.0214	1.1012	0.8878	1.2404	0.30	0.7639
QLB:Systemic opioids	0	0	0.0741	.	0.0741	.	.	.
QLB:TAPB	0	0	0.5694	.	0.5694	.	.	.
QLB:UG II-IHB	0	0	0.1356	.	0.1356	.	.	.
QLB:WI	0	0	0.3101	.	0.3101	.	.	.
TAPB:Systemic opioids	0	0	0.1302	.	0.1302	.	.	.
UG II-IHB:Systemic opioids	0	0	0.5469	.	0.5469	.	.	.
WI:Systemic opioids	0	0	0.2391	.	0.2391	.	.	.
TAPB:UG II-IHB	0	0	0.2381	.	0.2381	.	.	.
TAPB:WI	2	0.27	0.5446	0.1712	0.8366	0.2046	-1.71	0.0867
UG II-IHB:WI	0	0	2.2871	.	2.2871	.	.	.

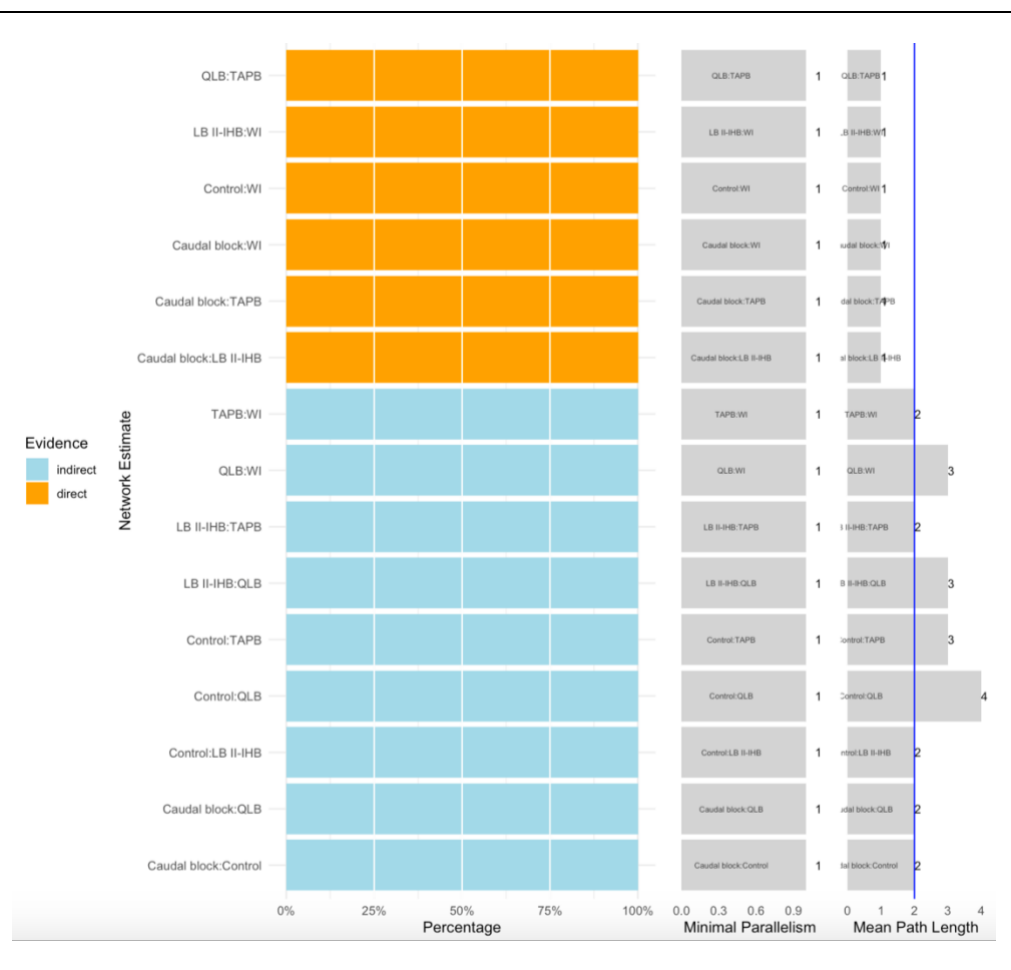
Section 11. Direct and indirect evidence proportion for the primary and secondary outcomes



Postoperative pain score at 4–6 h



Postoperative pain score at 8–12 h



Postoperative nausea and vomiting during the hospital stay and at home

