

Table S1: Summary of the studies evaluating analgesic interventions to alleviate pain after vaginal delivery with perineal tears or episiotomy								
Study	Design and Population	Intervention	Sample size	Analgesic effect	Opioid consumption	Other analgesic	Adverse events	Main conclusion/comments
Systemic analgesics								
Paracetamol								
Abalos et al.¹⁴	Meta-analysis Episiotomy	Paracetamol Placebo 10 studies 1973 to 1992 (2 included in review 1 not in English 7 too old)	700 579	Adequate pain relief 4 to 6 hours after giving birth in the paracetamol group compared with women in the placebo group (average RR 2.14, 95% CI 1.59 to 2.89; 10 trials, 1279 women; low-certainty evidence heterogeneity at 4 hours, I ² =72%)	No data	Additional pain relief with paracetamol compared with placebo (average RR 0.34, 95% CI 0.21 to 0.55; 8 trials, 1132 women, random effects (T ² = 0.32, Chi2 P < 0.01, I ² = 69%)).	No significant difference in nausea (average RR 0.18, 95% CI 0.01 to 3.66, one study, 232 women) or sleepiness (average RR 0.89, 95% CI 0.18 to 4.30, one study, 232 women).	“A single dose of paracetamol may improve perineal pain relief following vaginal birth and may reduce the need for additional pain relief. Potential adverse effects for both women and neonates were not appropriately assessed.”
Skovlund et al.¹⁵	RCT Episiotomy and perineal tears	Acetaminophen 1000 mg Placebo	40 38	<i>Uterine cramping pain H4:</i> Placebo 50mm Paracetamol 25mm <i>Episiotomy pain H4:</i> Placebo 25mm Paracetamol 15mm	No data	No data	No data	“Paracetamol was shown to be more effective than placebo both against uterine cramping and episiotomy pain. “ No statistical analysis
Pattarasiriwong et al.¹⁶	RCT episiotomy	Acetaminophen + tramadol Placebo <i>Immediately after perineorrhaphy</i>	98 90	Pain severity from 6 to 24 hours NS	No data	local infiltration 10mL of 1% lidocaine at the perineorrhaphy site	No data	“Acetaminophen/tramadol rectal suppository could not relieve perineal pain after normal vaginal delivery when comparing to placebo”
NSAIDs								
Wuytack et al.¹⁷	Meta-analysis episiotomy or perineal tears (1 st or 2 ^d degree)	NSAIDs Placebo NSAIDs Paracetamol	NSAIDs 3145 Placebo or paracetamol: 1692	NSAIDs vs placebo: Adequate pain relief at 4 hours (RR 1.91, 95% CI 1.64 to 2.23; 10 studies, 1573 women; low-certainty evidence) and at 6	No data	No data	No data	“In women who are not breastfeeding and who sustained perineal trauma, NSAIDs (compared to placebo or paracetamol) may provide greater pain relief for acute postpartum perineal

				hours (RR 1.92, 95% CI 1.69 to 2.17; 17 studies, 2079 women; very low-certainty evidence) NSAIDs may lead to more women achieving adequate pain relief at 4 hours, compared with paracetamol (RR 1.54, 95% CI 1.07 to 2.22; 3 studies, 342 women; low-certainty evidence) NS at 6 hours				pain and fewer women need additional analgesia, but uncertainty remains, as the evidence is rated as low- or very low-certainty”
Hedayati et al.¹⁹	Meta-analysis Episiotomy	Rectal NSAIDs vs placebo	131 128	<i>Perineal pain at 24h:</i> (RR) = 0,37, CI95% 0,10-1,38	No data	1 RCT, 89 women <i>Less additional analgesia at 24h:</i> RR = 0,31, CI95 % 0,17-0,54	no side effects experienced by women using the analgesic rectal suppositories or with placebo	“Rectal analgesia can reduce pain from perineal trauma following childbirth experienced by women and the intensity of any pain within the first 24 hours after birth. Women use less additional analgesia within the first 48 hours after birth when analgesic rectal suppositories are used.”
Harrison et al.¹⁸	RCT episiotomy	50 g Indomethacin + 1 g Ethamsylate 50 mg Indomethacin Placebo At 9 am on the study day	35 29 30	Mean pain score at 6h (4 points scale): 0.31±0.43 vs 0.46±0.66 vs 0.67±0.79 NS % reduction in pain: NS	No data	No data	NS	“Indomethacin and Ethamsylate was better than Indomethacin alone which in turn was better than placebo but not statistically significant”
Akhtar et al.²⁰	RCT episiotomy	Diclofenac 100 mg suppository Placebo <i>Single dose in birth room</i>	45 45	<i>Perineal pain at 24h (VAS)</i> 2.29 ± 0.53 vs 3.24 ± 0.77 p = 0.0001	No data	No data	No data	“Significantly lower pain with rectal diclofenac when compared with placebo in females undergoing vaginal delivery at term.”

Rezaei et al. ²¹	RCT episiotomy	Diclofenac suppository Indomethacin suppository Placebo <i>Single dose after perineorrhaphy, dosage unknown</i>	30 30 30	<i>Pain at 1st, 2nd, 6th and 12th hour</i> NS <i>Pain at 4th hour favor diclofenac</i> <i>No numerical values.</i>	No data	No data	No data	“Less pain score at 4th hour in Diclofenac group.”
Achariyapota et al. ²²	RCT episiotomy	Diclofenac 100 mg suppository Placebo <i>Single dose after perineorrhaphy</i>	36 36	<i>At 12th and 24th hour</i> 0.0±0.2 vs 4.5±2.6; p < 0.001 0.0±0.2 vs 2.0±0.4; p = 0.02 <i>At 1st and 2nd hour:</i> NS	No data	Paracetamol 1g at 6h	None	“Diclofenac suppository effective to reduce pain after episiotomy “
Dodd et al. ²³	RCT Episiotomy and perineal tears	Diclofenac 100 mg suppository Placebo <i>Delivery room and 12-24h after birth</i>	67 66	<i>Pain at 24h at rest</i> 2,8±0,3 vs 3.9±0.3; p 0.01 <i>At movement</i> 3.3±0.3 vs 4.7±0.3 p 0.004	No data	No data	NS	“Rectal non-steroidal anti-inflammatory drug suppositories is effective in reducing pain”
Wilasrusme et al. ²⁴	RCT episiotomy	Naproxen 550 mg Placebo Immediately after complete perineal suturing, the second dose was given 6 hours postpartum.	65 71	<i>Pain at 24 hours:</i> 2.3±2 vs 5.5±2.7 p < 0.001	first consumption in Naproxen group p < 0.001	Less paracetamol in Naproxen group p < 0.001	No side effects reported	“Rectal naproxen suppositories is effective for reducing perineal pain following vaginal delivery with episiotomy”
Facchinetti et al. ²⁵	RCT Episiotomy and perineal tears	Diclofenac 100 mg Ketoprofen 100 mg <i>Every 12 hours up to 48 hours</i> No placebo	133 128	NS	No data	NS	Fewer subjects with gastro-intestinal discomfort, stomach pain, and nausea in the Diclofenac group p = 0,038	“Diclofenac and Ketoprofen were quite similar in efficacy for the treatment of postpartum pain from episiotomy or second- to third-degree tears”
Lim et al. ²⁶	RCT Episiotomy and perineal tears	Diclofenac 100 mg Celecoxib 200 mg <i>Every 12 hours up to 24 hours</i>	164 165	<i>VAS at 24th hour at rest and when mobilized.</i> NS	NS	Requirement for rescue analgesia NS	More upper gastrointestinal symptoms in Diclofenac group (23.3% vs 34.5%;	“Oral celecoxib as equally analgesic effects as diclofenac at rest and at movement after normal birth.”

		No placebo					p 0.029)	
Suhrabi et al.²⁷	RCT Only episiotomy	Celecoxib 100 mg <i>every 12 hours</i> Ibuprofen 400 mg <i>every 6 hours</i> No placebo	85 85	NS	No data	No data	More gastric irritation in ibuprofen group	“Ibuprofen and Celecoxib are equally effective regarding pain, less side effects with the celecoxib “
Altungül et al.²⁸	RCT Only episiotomy	Diclofenac suppositories 100 mg Indomethacin suppositories 100 mg <i>Every day from the delivery room for three days</i>	35 35	<i>Pain at 1st hour (VAS)</i> 4.9 ± 0.8 vs 6.6 ± 1.2 ; $p < 0.05$ <i>Pain at 24th hour (VAS)</i> 2.4 ± 0.9 vs 3.4 ± 1.3 ; $p < 0,05$	No data	No data	No data	“Diclofenac sodium suppositories had more effective analgesia than indomethacin suppositories for early- and late-term perineal pain.”
Yildizhan et al.²⁹	RCT Episiotomy and perineal tears	Diclofenac suppositories 100 mg <i>Single dose after perineorrhaphy</i> Indomethacin suppositories 100 mg <i>2 x 100 mg, 12 h apart</i>	100 100	<i>Pain score at 24h</i> $1.89 \pm 1,79$ vs $2.07 \pm$ 1.82 ; NS	No data	Paracetamol <i>Additional analgesic at 24h</i> NS	Nausea, vomiting, stomach pain, disorientation NS	“No difference between rectal diclofenac and rectal indomethacin”
Ijaz et al.³⁰	RCT Only episiotomy	Diclofenac suppository 100 mg Oral mefenamic acid 500 mg <i>Single dose after perineorrhaphy</i> No placebo	100 100	<i>Perineal pain at 6th hour</i> 2.99 ± 1.00 vs 3.68 ± 0.875 . $p < 0,001$ <i>Perineal pain at 12th hour</i> 1.07 ± 0.856 vs 1.68 ± 0.91 . $p < 0.001$	No data	10 ml 2% Lidocaine infiltration	No data	“Less pain in rectal diclofenac group”
Akil et al.³¹	RCT Episiotomy and perineal	Dexketoprofen trometamol 50 mg IV	40	<i>VAS from 1st to 6th hour</i> NS	No data	Not mentioned	NS	“Paracetamol or dexketoprofen are equally efficient for pain after

	tears	Paracetamol 1000 mg IV <i>Post episiotomy and 6h after delivery</i> No placebo	38	No figures available				episiotomy “
Peter et al. ³²	RCT Episiotomy and perineal tears	Ibuprofen 400 mg Acetaminophen 600 mg with codeine 60 mg and caffeine 15 mg <i>When the patient first indicated she had pain</i> No placebo	127 110	<i>Pain during the first 24 hours</i> 3.2±2.3 vs 3.1±2.6, NS	No data	NS	No data	“Ibuprofen and acetaminophen with codeine and caffeine were similar in efficacy for the treatment of pain from episiotomy or third- or fourth-degree tears.”
Others systemic drugs								
Latif et al. ³³	RCT episiotomy	Celecoxib 200 mg Tramadol 100 mg <i>Single dose in the delivery room</i> No placebo	100 100	<i>Pain at 2nd and 4th hour: significantly improved with tramadol.</i> p<0,001 <i>Pain at 8th and 12h hour: NS</i>	No data	Paracetamol =	No data	“Oral Tramadol 100 mg is linked to a more significant reduction in pain scores at different time intervals compared with celecoxib 200 mg orally”
Abboud et al. ³⁴	RCT episiotomy	Butorphanol nasal spray 0.25 mg Butorphanol nasal spray 0.5 mg Butorphanol nasal spray 1 mg Butorphanol nasal spray 2 mg Placebo	30 30 30 30 30	NS (Onset of pain relief quicker with 2mg)	No data	No data	most frequent side effects were somnolence and dizziness and were dose related	“Transnasal butorphanol administration provides rapidity of onset of analgesia that would otherwise be available only with injectable administration, but without the risk, pain, or inconvenience of a needle.”
Regional analgesic interventions								
Epidural morphine								
Niv et al. ³⁵	RCT episiotomy	Group A: Epidural morphine 2 mg before onset of pain Group B: Epidural morphine 2 mg after onset of pain	45 45	VAS < 2 at onset of pain (84 % vs 22 %; no statistical analysis) More patients experienced pain 45 min after epidural in group B (p < 0.01)	No data	Paracetamol	No statistical analysis	“Epidural morphine for post episiotomy pain is much more effective if administered before the onset of pain”

		No placebo						
Macdonald et al. ³⁶	RCT episiotomy	4 mg 2 mg or saline <i>After suturing of episiotomy</i>	43 39 42	<i>Pain at 4h</i> 4mg (0.54±0.82) > saline (1.71±1.45) p<0.001, 2 mg (0.44± 0.96) > saline p <0.001 <i>Pain at 12h</i> 4 mg (1.11 ± 1.51) > saline (2.63±2.05) p<0.001 2mg (1.48±1.65) > saline p<0.05 <i>Pain at 24h</i> NS	<i>Analgesic requirements at 4h</i> 4mg (3) vs 2mg (1) vs saline (13) p < 0.01 <i>Analgesic requirements at 12h</i> 4mg (11) vs 2mg (5) vs saline (23) p < 0.01 <i>Analgesic requirements at 24h:</i> NS	Paracetamol	More pruritus, nausea, vomiting and retention of urine in the morphine groups No statistical analysis	“VAS pain scores and analgesics requirements less during first 12h for 2- and 4-mg groups More side effects”
Solano et al. ³⁷	RCT Episiotomy and perineal tears	2 mg 3 mg or saline <i>Within 1 h of delivery</i>	38 39 37	No difference during first 24 hours	No data	Additional analgesic use 2 mg: RR 0.4 (IC95% 0.1-0.9) 3 mg: RR 0.15 (IC95% 0.03-0.6)	Prurit (36,8% vs 30,7% vs 8,1%) Nausea (18,4% vs 15,4% vs 5,4%) No statistical analysis	“Epidural morphine during the immediate post-partum period is effective for managing pain. Although there was evidence of adverse side effects at the doses used, they were tolerable and did not require treatment. “
Pudendal nerve block								
Aissaoui et al. ³⁹	RCT episiotomy	Pudendal Nerve Block Ropivacaine 0.75 % (15 ml) Placebo	20 20	Less pain in infiltration group at 24h while sitting (p < 0.001) and while walking (p 0.05) Difference in pain score >10 pts	No data	Paracetamol NSAID	Not reported	“Pudendal nerve block provided superior analgesia with less need for supplemental analgesia after mediolateral episiotomy compared with conventional oral analgesic”
Perineal infiltration								

Schinkel et al.⁴⁰	RCT episiotomy	Perineal infiltration before repair with 15 mL of 0.75% ropivacaine 15 ml of 1% lidocaine Or with saline	51 54 49	VAS were low and not different between the 3 groups: ropivacaine 16.8 ± 11.6, lidocaine 12.4 ± 9.7; and saline 16.2 ± 1.5, p 0.08	No data	Paracetamol, NSAID First oral analgesic NS Analgesic intake NS	No data	“For the first 24 h, perineal infiltration of ropivacaine, lidocaine, and saline were equivalent in producing post-episiotomy analgesia”
Cardaillac et al.⁴¹	RCT episiotomy	Ropivacaine (75 mg) Placebo	137 135	Mean pain H24: 3.25 [1.6; 4.9] vs 3.28 [1.67; 4.88] Difference -0.03 IC95%[-0.52; 0.47]	No data	Paracetamol, NSAID NS	NS	“Ropivacaine infiltration after episiotomy did not prove beneficial compared with placebo”
Bhatia et al.⁴²	RCT episiotomy	Clonidine 1µg/kg + Lidocaine 2% Lidocaine 2% alone No placebo	60 60	Duration of analgesia during sitting (22.7±1.32h vs 6.06±1.26h) during walking (21.73±1.47h vs 5.33±1.18h) during squatting (19.875±1.48h vs 4.01±1.28) P<0.0001	No data	First rescue analgesia (hours) (22.7±1.32 vs 6.06±1.26; p < 0.0001)	No side effects in either group in the first 24h	“Clonidine when added to 2% lidocaine infiltration in episiotomy improves the quality and enhances the duration of sensory analgesia”
Pawanna et al.⁴³	RCT episiotomy	Dexamethasone 4mg + Lidocaine Lidocaine alone No placebo	180 180	Mean pain At 2 hours 4.32±1.64 vs 3.41±0.99; p<0.05 At 24 hours 1.47±1.19 vs 1.37±1.07; p 0.38	No data	Analgesic rescue during the first 24 hours after delivery in the study group was lower than the control group (p = 0.025)	There is no report of side effect.	“The use of dexamethasone combined with lidocaine intralesional before performing episiotomy results in a significant pain relief immediately after perineal repair and 2 hours post-partum.”
Khwanwong et al.⁴⁴	RCT episiotomy	Ketorolac 0.3% + 1% Lidocaine Lidocaine 1% alone No placebo	180 180	Mean pain At 2 hours (3.08 vs. 4.08; p<0.001) and 6 hours (2.52 vs. 3.63; p<0.001) At 24h NS	No data	No data	NS	“Infiltration of ketorolac with lidocaine on episiotomy wound significantly reduced pain after perineal repair, 2 hours and 6 hours postpartum compared with lidocaine alone”

Dengler et al. ⁴⁵	RCT Episiotomy 3% and perineal tears 97%	20 ml liposomal bupivacaine 20 ml 0.25% plain bupivacaine No placebo	53 55	no significant difference between vaginal pain scores at day 1, day 3 and day 7	Insufficient data	Paracetamol NSAID	NS	“No difference between groups in terms of perineal pain”
Khan et al. ⁴⁶	RCT episiotomy	Epidural only Epidural and perineal infiltration of 15 ml of saline before repair No epidural and perineal infiltration with 15ml of 0,5% lidocaine before repair	50 50 50	<i>Mean pain score at day 1</i> (4.65 vs 3.62 vs 4.01) Group epidural only > epidural + infiltration. p<0.01	No data	More analgesic requirement in « no epidural group » No statistical analysis	No data	“Both the VAS and analgesic requirements were higher in patients with conventional epidural analgesia (group 1) than in those with no epidural (group 3). Similarly, among patients with epidurals, VAS and analgesic requirements were both lower in those who had local infiltration (group 2) than in those who did not (group 1). “
Topic perineal local anesthetic								
Hedayati et al. ⁴⁷	Meta- analysis 8 RCT included	6 studies: topical anesthetic vs placebo 1 study: topical anesthetic vs no treatment 1 study topical anesthetic vs indomethacin vaginal suppository vs no treatment	976 women	No difference	No data	No difference	No difference	“Five of these trials measured pain experienced up to 24 hours after birth. All five trials showed no difference in pain relief when the topical anesthetic was compared with placebo.”
Seçkin et al. ⁴⁸	RCT episiotomy	Indomethacin vaginal suppository 100 mg 5% lidocaine pomades Control	29 30 28	<i>Mean pain score at 90 min.</i> 0.39±0.56 vs 0.43±0.56 vs 0.65±0.55; NS	No data	No data	No data	“100 mg indomethacin vaginal suppository has equal analgesic effect than lidocaine pomades or placebo”
Kafali et al. ⁴⁹	RCT episiotomy	Bupivacaine- soaked Spongostan + Perineal infiltration 1% Lidocaine	48	VAS 24 hr 1.5±1.3 vs 2.7±1.8 P < 0.05	No data	Diclofenac (mg/person) 33.8±40.5 vs 68.7±50.9 P < 0.01	No data	“Placement of bupivacaine soaked Spongostan in the episiotomy bed resulted in decreased postpartum pain and drug requirement”

		Perineal infiltration of 1% Lidocaine	51					
Tay et al.⁵⁰	RCT episiotomy	Procaine spirit Placebo	50 50	No difference between the 2 groups	No data	No difference in paracetamol consumption	No difference	“Routine procaine spirit on episiotomy wound is inefficient on perineal pain”
Delaram et al.⁵¹	RCT episiotomy	Mefenamic acid 250 mg 2% lidocaine cream No placebo	30 30	<i>Pain at 6th, 12th and 24th hours: NS</i>	No data	Additional analgesic NS	No data	“The effects of lidocaine cream and mefenamic acid on the relief of post-episiotomy pain were similar.”
Manfre et al.⁵²	RCT Episiotomy: 13% Perineal tears 1-2: 87%	Hydrocortisone cream Placebo cream No cream	27 27 27	<i>Perineal pain reduction NS</i>	No data	NSAIDs No statistical analysis	No data	“Use of perineal cream significantly reduced perineal pain compared to no cream but equal to placebo cream during the early postpartum period.”
Ointments								
Golezar et al.⁵³	RCT episiotomy	Bromelain (ananas comosus) Placebo	41 41	NS	No data	Acetaminophen NS	No data	“Bromelian is as effective as a placebo on pain”
Cheshfar et al.⁵⁴	RCT episiotomy	Ginger extract ointment 200 mg Placebo	35 35	No difference	No data	No data	No data	“200 mg of ginger ointment could not significantly improve the pain of episiotomy wounds 5 and 10 days after the intervention “
Aradmehr et al.⁵⁵	RCT episiotomy	Chamomile cream Placebo	57 57	<i>Pain at 12th hour and 1st day NS</i> <i>Pain at 7th day (11.36± 5.04 vs 14.88±7.34; p 0.03)</i> <i>Pain at 10th day (7.10±4.10 vs 9.96±4.81; p 0.02)</i> <i>Pain at 14th day (4.44±3.43 vs</i>	No data	Less acetaminophen uses in Chamomille group P= 0.001	No report on side effects of using Chamomile cream and placebo cream among mothers in both experimental and control groups.	“Chamomile cream reduces episiotomy pain and no significant side effect has been reported by mothers”

				7.41±4.92; p 0.03)				
Hajhashemi et al. ⁵⁶	RCT episiotomy	Hypericum perforatum Achillea millefolium Placebo No intervention	35 35 35 35	<i>Pain 7th day</i> (No values available) Hypericum perforatum > groups 3 and 4. p 0.001 Achillea millefolium > no intervention p < 0.05	No data	No data	No data	“Achillea millefolium and Hypericum perforatum ointments reduce perineal pain”
Mohammadi et al. ⁵⁷	RCT episiotomy	2% Cinamon Placebo	72 72	<i>Perineal pain VAS</i> <i>4h</i> (4.2±1.6 vs 4.5±1.7; p 0.003) <i>8h</i> (3.7±1.8 vs 4.4±1.7; p 0.002) <i>11 days</i> (1.2±1.6 vs 2.6±2.1; p<0.01)	No data	NSAIDs Additional analgesic NS	No side effects were reported by the participants in either group.	“2% cinnamon ointment on episiotomy incisions has a significant effect in decreasing perineal pain of the incision. But the effect is below 10 mm of the VAS.”
Toomari et al. ⁵⁸	RCT episiotomy	Silybum marianum Placebo	44 43	<i>Mean difference of pain severity at 12th hour, 5th day and 10th day</i> (6±2.03 vs 7.39±2 ; 2.07±5.20 vs 2.95±2.03; 0.11±0.53 vs 7.39±2) (p < 0.001)	No data	No data	No serious side effect for the drug was observed except for itching and burning which was the same in two groups of S. Marianum ointment and placebo ointment	“Mean difference of pain severity and in Silybum marianum ointment group in 12h after labor, at fifth day and tenth day after labor was significant comparing to control group which indicates decline in episiotomy pain severity.”
Kaviani et al. ⁵⁹	RCT episiotomy	Olive leaf extract Betadine solution Placebo	30 30 30	<i>Pain at 1st, 3rd, 7th and 14th day</i> NS	No data	No data	No data	“Olive leaf extract ointment is not effective on reducing pain after episiotomy”
Lavaf et al. ⁶⁰	RCT episiotomy	Phenytoin Honey cream Placebo	40 40 40	<i>Pain at 7th and 14th day</i> NS	No data	<i>Analgesic consumption during the first 24h hours</i> NS	Not reported	“Honey or phenytoin did not reduce episiotomy pain.”
Asgharikhat ooni et al. ⁶¹	RCT episiotomy	3% Equisetum arvense (Horse tail) Placebo	54 54	<i>Pain 5 days after intervention</i> 4.9±2.4 vs 7.1±2.4. p < 0.001	No data	<i>Mean number of diclofenac suppositories</i> 1.1±2.2 vs	No difference	“3% Equisetum arvense ointment promoted wound healing and relieved pain” during the 10 days period

				<i>Pain 10 days after intervention</i> 0.8±1.7 vs 4.6±2.6. p < 0.001		3.7±3.5; P < 0.001 <i>Number of acetaminophen pills</i> 6.8±4.4 vs 11.6±7.1; p < 0.001		after episiotomy”
Dorbati et al. ⁶²	RCT episiotomy	Alpha® Ointment plus a sitz bath with Betadine® solution Sitz bath with Betadine®solution	64 64	<i>Pain scores the first 24 hours</i> 4.48±1.33 vs 5.1±1.6 P 0.01 <i>The third day</i> 2.76±1.19 vs 3.6±1.6 P 0.001	No data	No data	No difference	“Alpha® ointment is effective in episiotomy wound repair and pain relief”
Vasileva et al. ⁶³	RCT Episiotomy and perineal tears	Topical application of Theresienol Control (no intervention)	20 20	<i>Pain severity reduced on day 1 and day 3.</i> No statistical analysis <i>Pain severity on day 5</i> NS	No data	Group A did not need additional analgesia with NSAIDs, it was necessary in 50% of Group B patients. No statistical analysis	No adverse effects because of the use of Theresienol have been identified	“no conclusion possible”
Moudi et al. ⁶⁴	RCT episiotomy	Mastic (Pistacia lentiscus) oleoresin Control	60 61	H24: 4.87(1.77) 4.39(1.89) P=0.31	No data	No data	No data	“Compared to the control group, the healing rates of episiotomy wounds treated by resin were higher”
Non-pharmacological interventions								
Cryotherapy								
Kim et al. ⁷²	Meta analysis	Cold gel pack/pad crushed ice gel pad ice pack	11 studies 1492 women	Average mean difference: 2.2560 95%CI (-2.0273; -6.5393)	No data	No data	No data	“cold application initiated immediately after birth or up to 24 h postpartum is effective in alleviating pain. Ice packs and gel pads had similar pain-relief effects. “
East et al. ⁷³	Meta analysis	One cooling treatment (ice, cold gel pad, cooling plus compression, cooling plus compression plus (being) horizontal) compared with	10 RCTs 1233 women	<i>Cooling treatment (ice pack or cold gel pad) versus no treatment:</i> perineal pain on a 10-point scale Within 4 to 6 hours (mean difference -4.46, 95%CI -5.07	No data	No data	No data	“Small amount of low or very low-quality evidence from small trials suggesting that cooling treatments may help relieve perineal pain after having a baby. No difference between ice packs and cold gel pads”

		another cooling treatment or no treatment or placebo		to -3.85; 1 study, 100 participants) Between 24 and 48 hours of giving birth (risk ratio 0.73, 95% CI 0.57 to 0.94; 1 study, 316 participants)				
Kirca et al.⁷⁴ 2022	Meta analysis	Cold gel pack, crushed ice gel pad, ice pack and cold gel pad applications together with routine care/acupressure/no application/lavender oil applications	3 RCTs 4 quasi randomized trials	Estimated average standardized mean difference pain after episiotomy. - 2.2560 (95% CI: -2.0273; -6.5393) (3 studies)	No data	No data	No data	“cold application (i.e. cold gel packs, crushed ice gel pads, ice packs and cold gel pads) initiated immediately after birth or up to 24 h postpartum is effective in alleviating pain.”
AS Kirca et al.⁶⁵ 2020	RCT episiotomy	Acupressure Ice pack in the perineum Standard care	40 40 40	Comparing these 3 methods (acupressure, ice pack, standard care) the acupressure has significantly reduced pain after the application (VAS at 30 min; 3.20 ± 1.28 vs. 3.77 ± 1.27 vs. 4.82 ± 0.93, VAS at 60 min; 4 2.65 ± 1.33 vs. 3.5 ± 1.37 vs. 4.62 ± 0.97, VAS at 120 min; 2.02 ± 1.44 vs. 3.5 ± 1.37 vs. 4.57 ± 0.93, <i>p</i> < 0.05)	No data	No data	No data	“Perineal pain felt after birth decreased in both experimental groups, but the effect of acupressure lasted longer than ice application”
Francisco et al.⁶⁶	RCT Episiotomy and perineal tears	Single ice-pack application Standard care	35 34	<i>Reduction of pain > 30%:</i> more frequent with Ice Packs at 1h (<i>p</i> <0,001) and 2h (<i>p</i> =0,002)	No data	Paracetamol	No adverse events reported	“This study supports the hypothesis that a single ice pack application for 10 min to the perineum after spontaneous vaginal birth alleviates perineal pain effectively.”

Leventhal et al.⁶⁷	RCT Episiotomy and perineal tears	Ice packs on the perineum	38	<i>Mean pain score at 20 min</i>	No data	Not mentioned	No adverse events reported	“Ice pack on the perineum is useful in the treatment of perineal pain”
		Water packs at set temperature (placebo)	38	Placebo=control				
		No treatment (control)	38	Placebo = experimental Experimental > control (1.6 vs 3.3; p = 0.032)				
Beleza et al.⁶⁸	RCT episiotomy	Bag of crushed ice to the perineal region for 20 min	24	<i>Pain 20 minutes after intervention</i> 4±3 vs 2.5±3	No data	Paracetamol NSAIDs	no adverse events	“Cryotherapy was effective in relieving perineal pain in women in the immediate postpartum period after vaginal birth with episiotomy 20 min after of application, this effect was no longer present after 1 hour.”
		Control	26	IC95% -2(-3.2; -0.9) <i>Pain 1 hour after intervention</i> 5±3.7 vs 3±3.2 IC95% -1.1 (-2.6; 0.3)				
Steen et al.⁶⁹ 2000	RCT Episiotomy and perineal tears	Maternity gel pad	38	No difference in self-assessed moderate/severe pain from day 1 to day 4	No data	Not mentioned	No data	“Data not sufficient to conclude”
		Ice packs	42					
		Epifoam	40					
Steen et al.⁷⁰ 2007	RCT Episiotomy and perineal tears	Gel pad	101	(4 points rating pain scale) No difference for pain when lying down, sitting down, or walking at day 1. Pain reduced in gel pad group at day 5 and 10	No data	Not mentioned	No data	“Gel pad, ice pack have no effect on pain during the first 24 hours Cooling gel pads appear to alleviate perineal pain to a greater extent than either ice packs or no application of localized cooling treatment during the first two weeks following childbirth.”
		Ice pack	107					
		No treatment	108					
Naviba et al.⁷¹	RCT episiotomy	Cooling gel pad	36	<i>Mean intensity perineal pain at day 1</i> NS. <i>day 2</i> (2.97 vs 3.83 vs 4.36; p 0.004), <i>day 5</i> NS <i>day 10</i> NS	No data	Mean number of acetaminophen (8.33 vs 12.84 vs 17.22) p = 0.001	No adverse events	“localized cooling of the perineum reduces the intensity of pain.”
		Ice pack	35					
		Placebo: no localized cooling	39					
Acupuncture								

AŞ Kirca et al. ⁶⁵ 2020	RCT episiotomy	Acupressure Ice pack in the perineum Standard care	40 40 40	Comparing these 3 methods (acupressure, ice pack, standard care) the acupressure has significantly reduced pain after the application (VAS at 30 min; 3.20 ± 1.28 vs. 3.77 ± 1.27 vs. 4.82 ± 0.93, VAS at 60 min; 4 2.65 ± 1.33 vs. 3.5 ± 1.37 vs. 4.62 ± 0.97, VAS at 120 min; 2.02 ± 1.44 vs. 3.5 ± 1.37 vs. 4.57 ± 0.93, <i>p</i> < 0.05)	No data	No data	No data	“Perineal pain felt after birth decreased in both experimental groups, but the effect of acupressure lasted longer than ice application”
KK Jaić et al. ⁷³	RCT episiotomy	Auricular acupuncture therapy No acupuncture	31 29	<i>Pain intensity at rest and during activity during the 1st day:</i> NS <i>On the 2nd day, patients in the acupuncture group had a statistically lower VAS score during rest and activity:</i> 4 (3–6) vs 3 (2–5); <i>p</i> 0.034 And 6 (5–7) vs 5 (3–6); <i>p</i> 0.043	No data	Paracetamol, Ibuprofen, Ketoprofen, Diclofenac The groups did not significantly differ during all 3 days in total analgesic consumption, type of analgesics and number of daily doses of analgesics	No adverse effects of acupuncture noted	“Pain intensity was significantly reduced in the acupuncture therapy group according to VAS scores on the second day”
Kwan et al. ⁷⁶	Blind RCT Episiotomy and perineal tears	tapes and seeds on four designated acupressure points on both ears tapes on four irrelevant points	126 130	Perineal pain: NS	No data	Mean paracetamol consumption : NS	No data	“There is no evidence to conclude that ear acupressure can effectively relieve perineal pain”
TENS								
Pitangui et al. ⁷⁷	RCT episiotomy	TENS high frequency No treatment	20 20	<i>Pain at 60 min resting</i> (1.36±1.53 vs 4.10 ±2.18; <i>p</i> < 0.001), <i>sitting</i> (2.42±1.80 vs 5.21±2.01; <i>p</i> < 0.001), <i>ambulating</i> (2.36±2.06	No data	Paracetamol NSAIDs Ice packs	No adverse events	“TENS is a safe and viable non-pharmacological analgesic resource to be employed for pain relief post-episiotomy. “

				vs 5.21±2.39; p < 0.001)				
Zakariaee et al. ⁷⁸	RCT episiotomy	TENS-On TENS-Off Control	40 40 40	<i>Pain at 60 min, resting status</i> (3.18±2.04 vs 4.75±1.65 vs 6.44±2.18; p 0.008) <i>Sitting status</i> (5±1.97 vs 5.57± 1.57 vs .55±1.96; p 0.167) <i>Walking status</i> (1.72±2.19 vs 3.26±1.60 vs 3.88±2.08; p 0.046) <i>Pain at 120 min NS</i>	No data	No data	In this study, no side effect was seen during the TENS intervention, including skin sensitivity, ulcers, and burns.	“Less pain severity during walking and resting in the TENS group at 60min. No other differences.”
Other non-pharmacological interventions								
Bretelle et al. ⁷⁹	RCT Mixed perineal injury	capacitive resistive radiofrequency therapy none	29 31	No significant differences between groups regarding pain at rest on the second day after treatment evaluated by VAS	No data	NSAIDs, regional anesthesia Total paracetamol intake at day 2 (978±167 vs 1700±2625 ; p 0.035)	No data	“VAS > 4 at day 2 was not different in the experimental and the control groups. Lower consumption of paracetamol in radiofrequency group”
Chougala et al. ⁸⁰	RCT Only episiotomy	Cryo gel pad and therapeutic ultrasound Cryo gel pad and low-level laser therapy	30 30	Day 1 (7.6±1.29 vs 7.6±1.39; p 0.97) Day 3 (2.2± 1.03 vs 4.6±1.32; p <0.001)	No data	Not mentioned	No data	“Therapeutic ultrasound with cryo gel pad can be used to reduce perineal pain following vaginal delivery with episiotomy”
Surgical techniques								
No suture vs suture								
Elharmeel et al. ⁸¹	Meta-analyse perineal injury	Surgical repair of spontaneous perineal tears	2 RCT 154	No meta-analysis				“insufficient evidence to suggest that one method is superior to the other regarding healing and recovery in the early or late postnatal periods in women with perineal lacerations

								during vaginal birth”
Lundquist et al. ⁸²	RCT perineal injuries	Suture of minor perineal tear No suture	40 38	NS	No data	No data	No data	“After a vaginal birth no drawbacks were noted when small lacerations in the labia, vagina, and perineum were left to heal spontaneously without suturing.”
Fleming et al. ⁸³	RCT perineal injuries	Suture No Suture	33 41	NS	No data	No data	Wound healing better in the sutured group at all time points	“No evidence that women who are sutured experience more (or less) pain than those who are not sutured. But perineum does not heal so well in women who are not sutured.”
Swenson et al. ⁸⁴	RCT second-degree perineal tears	Surgical glue Suture No suture	14 11 10	At 2 weeks postpartum, women with suture had higher median pain scores on the McGill (15.0 suture vs 2.0 glue vs 2.0 no suture, P=.03)	No data	No data	Wound healing was similar in the three groups	“Compared to no suture and surgical glue, suturing the perineal skin was associated with the highest postpartum pain scores”
Lallemant et al. ⁸⁵	RCT first-degree perineal tears	Digital compression if bleeding followed by suture if persistent bleeding. Systematic suture	71 72	Perineal pain was significantly higher at day 1 in the systematic suture group (2.38 vs 1.69; P = 0.034)	No data	No data	REEDA score was significantly higher in the systematic suture group (1.4 vs 0.9; P = 0.036)	“Women in the conservative management group had less pain at the 1st day follow-up and lower REEDA scores at the 10th day follow-up.”
Continuous vs Interrupted suture								
Kettle et al. ⁸⁶	Meta-analysis Mixed perineal injury	Continuous suturing Interrupted suturing Episiotomy or second-degree tears	16 RCT 8184 women	Pain at 2 days is lower when continuous suture techniques are used for perineal closure versus interrupted sutures (RR 0.76; 95% CI 0.66 to 0.88, 9 trials, 4231 women; I ² = 67%)	No data	No data	No data	“Continuous suturing techniques for perineal closure is associated with less short-term pain.”

				Two-stage repair techniques were associated with fewer women experiencing pain at up to 2 days and at up to 14 days (average RR 0.92; 95% CI 0.84 to 1.02 and RR 0.86; 95% CI 0.76 to 0.98, respectively)				
Qurat-Ul-Ain <i>et al.</i>⁸⁷	RCT episiotomy	continuous suturing interrupted suturing	50 50	No pain at 24h (36.0% vs 72.0%. p 0.0001) No VAS values	No data	NSAIDs	No data	continuous suturing of episiotomy repair was observed to be the most effective in terms of significant less post operative pain compared to interrupted suturing
Suture materials								
Kettle <i>et al.</i>⁸⁸	Meta-analysis Episiotomy and second degree tears	Absorbable suture materials Standard synthetic sutures	11 RCT 10171	Comparing standard synthetic with rapidly absorbing sutures, no difference in pain intensity was observed between the groups	No data	No data	but more women required suture removal in the standard synthetic suture group.	“There were few differences between standard and rapidly absorbing synthetic sutures but more women needed standard suture removing.”
Odijk <i>et al.</i>⁸⁹	RCT episiotomy	Intracutaneous skin closure with Monocryl® 3-0 or Vicryl Rapide™	64 67	Perineal pain (sitting, walking, lying down at 24h, 10 days, 6 weeks, 3 months) NS	No data	Additional analgesic at 24h and 10 days NS	No Data	“Use of Monocryl® 3-0 and Vicryl Rapide™ 3-0 for intracutaneous closure of the skin after mediolateral episiotomy leads to equal pain scores ten days after delivery and therefore both materials may be considered for this use.”
Devi <i>et al.</i>⁹⁰	RCT episiotomy	Trusynth Fast ® or Vicryl Rapide ® suture was used for their episiotomy repair	47 49	no significant difference in perineal pain between the two groups at any visit	No data	No data	NS	“Trusynth Fast ® suture is clinically equivalent to Vicryl Rapide ® suture”
Glue								

Mota et al. ⁹¹	RCT episiotomy	Adhesive glue for closure of perineal skin Subcuticular suture	53 57	Pain when lying down, when seated, when walking, passing urine or stool. NS	No data	Not mentioned	No data	“Perineal skin closure using adhesive glue is faster than subcuticular suture, and associated with a similar incidence of complications and pain in the first 30 days”
Atesli et al. ⁹²	RCT episiotomy	butyl cyanoacrylate tissue adhesive 3/0 rapid absorbable polyglactin 910 sutures	25 27	<i>VAS scores lower in tissue-adhesive group at the 48th hour:</i> 1.40±0.50 vs.3.44±0.93; p<0.01 <i>and sixth week</i> 1.12±0.72 vs 2.07±0.82. p < 0.01	No data	In the tissue-adhesive group, fewer paracetamol pills were used in first 48 than in the other group (1.97±0.93 vs. 2.67±1.21, p = 0.023)	No statistically significant difference in dyspareunia rate	“The efficacy of using n-butyl cyanoacrylate tissue adhesives versus 3/0 rapid absorbable polyglactin 910 sutures for cutaneous episiotomy repair was similar. However, taping with tissue adhesive has the advantages of fast application and a painless postpartum period”
Bowen et al. ⁹³	RCT episiotomy	Enbucrilate tissue adhesive Subcuticular polyglycolic acid suture	32 30	With enbucrilate less postnatal pain while walking, became pain free in a shorter period (25 d vs. 18 d; p < 0.01) and pain-free intercourse sooner (34 d vs. 52 d; p < 0.001)	No data	No data	No adverse events	“Pain scoreless while walking day 1, 2 and 4; micturition and defecation. NS at rest, while sitting.”
Study published after the cut-off date								
Caroci-Becker et al. ⁹⁶	RCT first-degree tear; a second-degree tear or episiotomy	Surgical glue or sutured with thread. Subgroups: - first-degree tear - -degree tear or episiotomy	35 35 35 35	<i>The women treated with surgical glue had less perineal pain (p ≤ 0.001).</i>	No data	No data	no difference in the healing process	“Perineal repair with surgical glue has low pain intensity and results in a healing process similar to suture threads.”