



Article scientifique

Article

2025

Supplemental data

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This file is a(n) Supplemental data of:

Commonly used interventional procedures for non-cancer chronic spine pain : a clinical practice guideline

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This publication URL:

<https://archive-ouverte.unige.ch/unige:185828>

Publication DOI:

[10.1136/bmj-2024-079970](https://doi.org/10.1136/bmj-2024-079970)

Appendix 2: Supplementary tables

Table 1: Detailed characteristics from 81 eligible randomised clinical trials (7,977 patients) included for meta-analysis

Category of chronic spine pain	Presenting complaint ¹	Diagnostic method ²	No. of trials
Axial pain	facet joint syndrome	nerve block	13
		clinical evaluation	9
		intra-articular injection	5
		multiple methods	1
	sacroiliac joint syndrome	intra-articular injection	4
		nerve block	3
		clinical evaluation	2
	intervertebral disc syndrome	nerve block ³	2
		clinical evaluation	1
	spondylolisthesis	imaging	1
	mixed complaints	nerve block	1
Radicular pain	disc herniation/bulge	imaging	17
		clinical evaluation	5
		nerve block	1
		multiple methods	1
	spinal stenosis	imaging	8
	mixed complaints	imaging	1
Both axial and radicular pain	chronic post-surgical pain	clinical evaluation	2
	no additional details	clinical evaluation	2

¹ as reported by trial authors.

² diagnostic methods reported by authors.

³ nerve blocks to exclude facet and sacroiliac joint complaints. Discography in remaining patients.

Table 2 Total costs of interventional procedures for spine-related pain relief in China

	Interventional Procedures	Total cost range (US\$)*
1	DRG RF+EI (LA, S)	445-456
2	Joint RF+JTI (LA, S)	483-496
3	EI (LA, S)	14-42
4	EI (S)	15-45
5	Joint-targeted injection (S)	13-73
6	IM (LA, S)	12
7	DRG+EI (LA)	442
8	DRG RF	427-437
9	Joint RF	416-538
10	EI (LA)	14-39
11	Joint-targeted injection (LA, S)	54-75
12	Joint-targeted injection (LA)	65-68
13	IM (LA)	3-18

DRG, dorsal root ganglion; RF, radiofrequency ablation; EI, epidural injection; LA, local anesthetic; S, steroid; IM, intramuscular injection; JTI, joint targeted injection

*All cost data were presented in 2023 US dollars that converted from 2022 Chinese Yuan using exchange rate (0.1414) and consumer price index

1. Exchange rate:

<https://www.dollarfx.org/zh/%E4%BA%BA%E6%B0%91%E5%B8%81/2023> (Accessed on 19th November 2023)

2. Consumer Price Index:

https://www.gov.cn/govweb/lianbo/bumen/202311/content_6914347.htm (Accessed on 19th November 2023)

Table 3: Resources and costs of interventional procedures for pain relief in China

[illegible]

2362	1.lidocaine 1% 1.5ml	0.098	1.5		1.El	14.1	1. C-arm FG	11.3	30
	2.betamethasone 3 mg	1.105	3.3						
2418	1.lidocaine 5ml	0.098	2.4		1.El	14.1	1. C-arm FG	11.3	34
	2.betamethasone 1ml	1.105	6.6						
2679	1.lidocaine 0.5% 4ml	0.098	2.0		1.El	14.1	1. C-arm FG	11.3	34
	2.betamethasone 6mg	1.105	6.6						
2462	1.lidocaine 0.5% 5ml	0.098	2.4		1.El	14.1			23
	2.betamethasone 6mg	1.105	6.6						
2620	1.lidocaine 0.5% 9ml	0.098	4.4		1.El	14.1	1. C-arm FG	11.3	36
	2.betamethasone 6mg	1.105	6.6						
1889	1.lidocaine 0.5% 10ml OR 2 ml	0.098	4.9		1.El	14.1	1. C-arm FG	11.3	31
	2.triamcinolone 40 mg/ dexamethasone 10mg	0.025	1.0						
2407	1.lidocaine 0.5% 4ml	0.098	2.0		1.El	14.1	1. C-arm FG	11.3	34
	2.betamethasone 6mg	1.105	6.6						
2593	1.lidocaine 0.5% 9ml	0.098	4.4		1.El	14.1	1. C-arm FG	11.3	36
	2.betamethasone 6mg	1.105	6.6						
	3.midazolam	0.332	-						
	4.fentanyl	5.251	-						
	5.sterile saline 2 ml	0.001	0.0						
2597	1.lidocaine 0.5% 9ml	0.098	4.4		1.El	14.1	1. C-arm FG	11.3	36
	2.betamethasone 6mg	1.105	6.6						
	3.midazolam	0.332	-						
	4.fentanyl	5.251	-						
	5.sterile saline 2 ml	0.001	0.0						
8204	1.lidocaine 4ml	0.098	2.0		1.El	14.1	1. C-arm FG	11.3	34
	2.betamethasone 6mg	1.105	6.6						
3046	1.bupivacaine 0.25% 2ml	0.142	0.7		1.El	14.1	1. C-arm FG	11.3	27
	2.methylprednisolone 40mg	0.015	0.6						
3507	1.bupivacaine 0.25% 2ml	0.142	0.7		1.El	14.1			17
	2.triamcinolone 80mg	0.026	2.0						
9605	1.bupivacaine 0.25% 1.5-2ml	0.142	0.7		1.El	14.1	1. C-arm FG	11.3	27
	2.methylprednisolone 40mg	0.015	0.6						
	3.normal saline solution 2.5ml	0.001	0.0						
2599	1.lidocaine 2% 1ml	0.098	2.0		1.El	14.1	1. C-arm FG	11.3	29
	2.dexamethasone 2mg	0.819	1.6						
4821	1.bupivacaine 0.25% 1.5-2 ml	0.142	0.7		1.El	14.1	1、C-arm FG	11.3	27
	2.methylprednisolone acetate 20mg	0.015	0.3						
	3.gabapentin 300mg thrice daily orally	0.000	0.2						
	4.amitriptyline 25mg once daily orally	0.001	0.0						
5623	1.lidocaine 0.5% 9ml	0.098	4.4		1.El	14.1	1. C-arm FG	11.3	36
	2.betamethasone 6mg /methylprednisolone 40 mg	1.105	6.6						
	3.midazolam	0.332	-						

	4.fentanyl	5.251	-							
3053	1.triamcinolon 10mg	0.026	0.3			1.EI	14.1			14
13512	1.lidocaine 0.25%-1% 1-3ml	0.098	2.9			1.EI	14.1	1. C-arm FG	11.3	42
	2. triamcinolone (60 to 120 mg) OR betamethasone (6 to 12 mg) OR dexamethasone (8 to 10 mg) OR methylprednisolone (60 to 120 mg).	1.105	13.3							
2464	1.lidocaine 0.5% 4 ml	0.098	2.0			1.EI	14.1	1. C-arm FG	11.3	32
	2.betamethasone 6mg	0.819	4.9							
1962-1	1.bupivacaine 0.125% 10-15 ml	0.142	2.7			1.EI	14.1			18
	2.methylprednisolone 80mg	0.015	1.2							
1962-2	1. 10-15 ml 0.125% bupivacaine (12.5mg-18.75mg)	0.142	2.7			1.EI	14.1			19
	2. 80 mg triamcinolone	0.026	2.0							
	3.diclofenac as needed (50mg tablets, up to four times daily)	0.001	0.1							
1962-3	1. 10-15 ml 0.125% bupivacaine (12.5mg-18.75mg)	0.142	2.7			1.EI	14.1			29
	2. 15 mg dexamethasone	0.819	12.3							
	3.diclofenac as needed (50mg tablets, up to four times daily)	0.001	0.1							
14989	1. 9ml 1% lidocaine hydrochloride	0.098	8.8			1.EI	14.1	1.Ultrasound - guided	6.2	33
	2. 1 ml triamcinolone acetoneide 40 mg	0.026	1.0							
	3. 3 ml 1% lidocaine	0.098	2.9							
15343	1. 10 ml 0.5% Lignocaine;	0.098	4.9			1.EI	14.1	1. C-arm FG	11.3	32
	2. 80 mg 2 ml Triamcinolone Acetonide	0.026	2.0							
	3. 50 mg diclofenac tablet (if aggravation of symptoms like pain in back, buttocks or legs)	0.001	0.1							
17456	1. 2% ropivacaine 10ml	0.034	6.7			1.EI	14.1	1. C-arm FG	11.3	35
	2. triamcinolone acetoneide 40 mg/ml 3 vials of 1 ml	0.026	3.1							
	3. 0.9% saline solution 20 ml	0.001	0.2							
6178	1. methylprednisolone acetate 40 mg	0.015	0.6			1.EI	14.1			16
	2.dexamethasone phosphate 8 mg	0.070	0.6							
	3. 2% prilocaine HCl 7 ml	0.009	1.2							
	4. povidone solution 10ml	0.000	0.0							
	5. paracetamol (if needed)	0.001	0.0							
EI (S)										
3884	1.methylprednisolone 80mg (2ml)	0.015	1.2			1.EI	14.1			17
	2.isotonic saline 8ml	0.001	0.0							
	3. 2% lidocaine	0.098	2.0							
1858	1. methylprednisolone 80 mg	0.015	1.2			1.EI	14.1			15

	2.isotonic saline 18ml	0.001	0.0							
751	1. betamethasone acetate 1.5 ml (9 mg)	1.105	9.9			1.EI	14.1	1. C-arm FG	11.3	35
	2. 2% preservative-free xylocaine (lidocaine) 1.5 ml (30 mg)	0.098	2.9							
1889	1.isotonic saline 10ml	0.001	0.0			1.EI	14.1			16
	2.lidocaine	0.098	2.0							
1359	/					1.EI	14.1			/
1359	/					1.EI	14.1			/
2381	1. 1% lidocaine	0.098	2.0			1.EI	14.1	1. C-arm FG	11.3	45
	2. dexamethasone sodium phosphate 1 ml (10 mg/ml)	0.070	0.7			2. CT/x-ray	17.3			
2740	1.triamcinolone 40 mg	0.026	1.0			1.EI	14.1	1.Ultrasound - guided	6.2	15
	2.0.9% saline 29 ml	0.001	0.0							
7058	1.methylprednisolone 80mg	0.015	1.2			1.EI	14.1			15
	2.normal saline 10ml	0.001	0.0							
2334	1. depo methylprednisolone 60mg	0.015	0.9			1.EI	14.1			15
	2. normal saline 3ml	0.001	0.0							
JTI (S)										
305	1. 2 ml 0.5% bupivacaine	0.142	1.4			1.JTI	53.6	1. C-arm FG	11.3	68
	2. 1 ml 40 mg/ml methylprednisolone acetate	0.015	0.6							
	3. aceclofenac tablets for 3-5 days	0.002	1.1							
1426	1. 80mg methylprednisolone acetate	0.015	1.2			1.JTI	53.6	1. C-arm FG	11.3	67
	2. 1 ml 0.5 % bupivacaine	0.142	0.7							
	3. 0.5 ml Contrast dye (OMNIPAQUE)	0.001	0.1							
1426	1. 80mg methylprednisolone acetate	0.015	1.2					1. C-arm FG	11.3	13
	2. 1 ml 0.5 % bupivacaine	0.142	0.7							
	3.diclofenac in 50 mg tablets taken twice daily for two weeks	0.001	2.1							
3711	1. 1.5 ml isotonic sodium chloride	0.001	0.0			1.JTI	53.6			57
	2. 1.5 ml 20 mg/ml lidocaine	0.098	2.9							
5083	1. 1 ml 40mg/ml depot methylprednisolone	0.015	0.6			1.JTI	53.6	1. C-arm FG	11.3	65
2381	1. 1% lidocaine	0.098	1.0			1.JTI	53.6	1.CT/X-ray	17.3	73
	2. 1 ml of 10 mg/ml dexamethasone sodium phosphate	0.070	0.7							
4122	1. 20mg (1 ml) of methylprednisolone acetate	0.015	0.3			1.JTI	53.6	1. C-arm FG	11.3	65
	2. 1 or 2 ml of isotonic saline	0.001	0.0							
IM (LA, S)										
2476	1.1 ml:20 mg triamcinolone hexacetonide (6 injections, total 120 mg)	0.026	3.1			1. IV/IM Injection	0.5			12

	2. lidocaine (1ml, 6 injections, total 6ml);	0.098	5.9							
	3.acetaminophen tablets as needed (maximum 750 mg 4 times a day)	0.001	2.4							
	4.diclofenac tablets, as needed (maximum 50 mg 3 times a day)	0.001	0.2							
DRG+EI (LA)										
8	1. Bupivacaine 0.5% 1 mL	0.142	0.7	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	442
						2.EI	14.1			
DRG RF										
1290	1. mepivacaine 2% (3–5ml)	2.009	10.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	437
5451	1. 1% lidocaine	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. FG	11.3	428
14706	NR			1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	427
Joint RF										
1681	1. 1% lidocaine (local)	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	428
364	1. 2% mepivacaine 0.5ml	2.009	1.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	428
3187	1. 1% lidocaine (local)	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	434
	2. bupivacaine 0.5% 2ml	0.142	5.7							
3284	1. Lidocaine 1% (local)	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	429
	2. Lidocaine 2% 0.3 ml	0.098	0.6							
	3. Prilocaine 2% 0.5ml	0.009	0.1							
5083	1. Lidocaine 2% 0.5ml	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. FG	11.3	429
	2. Lidocaine 2% 0.5 ml at each sacral level	0.098	1.0							
2058	NR			1.RF generator	311.1	1.RF	104.9	1.FG	11.3	427
2087	1. Lidocaine 2% 0.3 ml	0.098	0.6	1.RF generator	311.1	1.RF	104.9	1. FG	11.3	428
6930	1. Lidocaine 2% 0.5ml	0.098	1.0	1.RF generator	311.1	1.RF	104.9	NR		417
2368	NR			1.RF generator	311.1	1.RF	104.9	1. FG	11.3	427
14700	1. Propofol IV 0.5 mg/ml	0.013	0.0	1.RF generator	311.1	1.RF	104.9	1. FG	11.3	538
	2. Remifentanyl IV 0.05 mg/kg/min	11.249	50.6							
	3. Lidocaine 2% 1ml per level (local)	0.098	2.0							
	4. Lidocaine 2% 10ml x3 electrodes at multiple levels	0.098	58.6							
2676	1. Lidocaine 2% 0.5cc per level	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	429
	2. Bupivacaine 0.75% 0.5cc per level	0.142	0.5							
758	1. Lignocaine 1% 1ml per cannula	0.098	1.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	428
13905	1. Lidocaine 1% 2ml per site (local)	0.098	2.0	1.RF generator	311.1	1.RF	104.9	NR		420
	2. Lidocaine 1% 2ml (regional)	0.098	2.0							
3910	NR			1.RF generator	311.1	1.RF	104.9	1. FG	11.3	427
6521	1. Lidocaine 2g/ 10ml	0.098	2.0	1.RF generator	311.1	1.RF	104.9	1.X-ray	17.3	435
737-1	1. Lidocaine 2% 1-2 ml	0.098	2.0	1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	429
737-2	1. Lidocaine 2%	0.098	2.0	1.RF generator	311.1	1.RF	104.9	1. FG	11.3	429
737-3	NR			1.RF generator	311.1	1.RF	104.9	1. FG	11.3	427
785	NR			1.RF generator	311.1	1.RF	104.9	1. C-arm FG	11.3	427

[illegible]

2464	1. Lidocaine 0.5% 2ml (10mg)	0.098	1.0	NR		1.EI	14.1	1. FG	11.3	26
1962	1. Bupivacaine 0.125% 10-15ml (12.5mg to 18.75mg)	0.142	2.7	NR			14.1	None		17
1967	1. Lidocaine 0.5% 2ml (10mg)	0.098	1.0	NR		1.EI	14.1	1.Scotty dog image	11.3	26
9605	1. Bupivacaine 0.25% (volume not specified)	0.142	0.4	NR		1.EI	14.1	NR		14
3053	1. Ropivacaine (dose/volume not reported)	0.034	0.0	NR		1.EI	14.1	1. FG	11.3	25
8	1. bupivacaine 1 mL 0.5%	0.142	0.7			1.EI	14.1			26
13512	1. Lidocaine 0.25% to 1% 1 to 3ml	0.142	1.1	NR		1.EI	14.1	1. FG	11.3	27
JTI (LA, S)										
3711	1. 1.5 ml (40 mg/ml) methylprednisolone acetate	0.015	0.9			1.JTI	53.6	1. C-arm FG	11.3	69
	2. 1.5 ml (20 mg/ml) lidocaine	0.098	2.9							
4180-1	1. 2ml (80mg) methyprednisone acetate	0.015	1.2			1.JTI	53.6	1. C-arm FG	11.3	70
	2. 6ml (30mg) bupivacaine hydrochloride	0.142	4.3							
2659	1. 8 ml 1% lidocaine	0.098	7.8	1. Needles	-	1.JTI	53.6	1. C-arm FG	11.3	75
	2. 2-3 ml bicarbonate	0.004	0.0							
	3. 3 ml nonionic contrast, such as iohexol 240 mg/ml	0.001	0.5							
	4. 40 mg methyl-prednisolone acetate (1 ml)	0.015	0.6							
	5. 1.5-2ml 0.25%-0.5% bupivacaine	0.142	1.4							
7009	1. 0.5ml of radio-opaque dye	0.001	0.0	1. Needles	-	1.JTI	53.6	1. C-arm FG	11.3	71
	2. 1 ml of a solution of lignocaine 2% and (2%1ml)	0.098	2.0							
	3. bupivacaine 0.5% 1 ml:25 mg	0.142	3.5							
	4. methylprednisolone suspension 20mg	0.015	0.3							
3808	1. 1.5 ml (40 mg/ml) methylprednisolone acetate	0.015	0.9			1.JTI	53.6	1. C-arm FG	11.3	69
	2. 1.5 ml (20 mg/ml) lignocaine (1.5 ml 20mg/ml: 30mg)	0.098	2.9							
2476	1. triamcinolone hexacetonide (1 ml:20 mg, 6 injections, total 120 mg);	0.026	3.6	1. Needles	-	1.JTI	53.6	1. C-arm FG	11.3	74
	2. lidocaine (1ml, 6 injections, total 6ml);	0.098	5.9							
	3. 0.5 ml of nonionic contrast medium	0.001	0.0							
528-1	1. 0.25 ml of 0.5% bupivacaine;	0.142	0.2	1. Needles	-	1.JTI	53.6	1. C-arm FG	11.3	65
	2. 0.25 ml of 40 mg/ml depomethylprednisolone (1.25mg)	0.015	0.0							
2149	1. 12 mg betamethasone	1.105	13.3			1.JTI	53.6			67

[illegible]

2024	1. Lidocaine 0.5% or bupivacaine 0.25% 0.5 to 1ml	0.098	0.5	1. Needles	-		53.6	1. FG	11.3	65
	2. Sarapin 0.5 to 1 ml	/								
1305	1. Bupivacaine 0.5 to 1.5 ml	0.142	0.5	NR		1.JTI	53.6	1. FG	11.3	65
2873 & 3157	1. Lidocaine 0.5 to 1 ml	0.098	0.5	1. Needles	-	1.JTI	53.6	1. FG	11.3	65
	2. Sarapin 0.5 to 1 ml	/								
7009	1. Lidocaine 2% 1ml	0.098	2.0	1. Needles	-	1.JTI	53.6	1. FG	11.3	68
	2. Bupivacaine 0.5% 1ml	0.142	0.7							
3808	1. Lidocaine 1.5 ml	0.098	0.7	1. Needles	-	1.JTI	53.6	1. FG	11.3	66
	2. Sodium chloride 1.5ml	0.001	0.0							
IM (LA)										
2134	1. 3 ml 1% diffuse lidocaine infusion (30mg)	0.098	2.9	1. Needles	-	1. IV/IM Injection	0.5	NR		3
1359	NR	/		1. Needles	-	1. IV/IM Injection	0.5	1. Radioscopy	17.3	18

DRG, dorsal root ganglion; RF, radiofrequency ablation; EI, epidural injection; LA, local anesthetic; S, steroid; IM, intramuscular injection; EI, Epidural/Intraarticular injection; FG, fluoroscopic guidance; IV Intravenous; JTI, joint-targeted injection; NR not reported. The cost of needle was included in administrative cost.

All cost data were presented in 2023 US dollars that converted from 2022 Chinese Yuan using exchange rate (0.1414) and consumer price index

1.Exchange rate: <https://www.dollarfx.org/zh/%E4%BA%BA%E6%B0%91%E5%B8%81/2023> (Accessed: 19th November 2023)

2. Consumer Price Index: https://www.gov.cn/govweb/lianbo/bumen/202311/content_6914347.htm (Accessed: 19th November 2023)