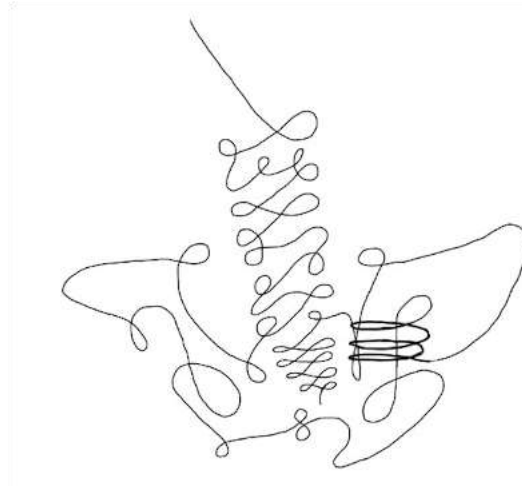


Minimally invasive sacroiliac joint fusion versus conservative management in patients with sacroiliac joint dysfunction: a systematic review and meta-analysis

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Rationale

- The sacroiliac joint (SIJ) is affected in 14-22% in individuals presenting with chronic low back or buttock pain.
- This percentage is even higher in patients that underwent lumbar fusion surgery; 32-42%.
- Currently, there is no standard treatment or surgical indication for SIJ dysfunction.
- When patients do not respond well to non-surgical treatment, minimally invasive sacroiliac joint fusion (MISJF) seems to be a reasonable option.



Objective

- This systematic review and meta-analysis aims to evaluate the current literature on the effectiveness of MISJF compared to conservative management in patients with SIJ dysfunction.



Methods

- A systematic search according to the PRISMA guidelines was conducted.
- Inclusion criteria were RCT's or comparative cohort studies that compared MISJF with conservative management.
- Primary outcome measures were pain, disability and patient satisfaction.
- Secondary outcomes were (serious) adverse events, financial benefits and costs.

Results

- Inclusions: 2 RCTs, 1 retrospective cohort study and 1 cost- effectiveness analysis
 - All used cannulated triangular, titanium implants
- Sample size: 341 patients (181 MISJF and 170 conservative)
- Primary outcome: VAS and ODI in favor of MISJF group
- Secondary outcome:
 - Adverse events: minimal complications and evenly distributed in both groups
 - Costs: MISJF seems more cost effective than conservative options



Results

Table 1: VAS-pain score

Studies	VAS-pain CM group (SD)		VAS-pain MISJF group (SD)			MISJF vs CM
	Pre	Post (6 months)	Pre	Post (6 months)	Post (24 months)	
Polly et al.	82.2 (9.9)	70.3 (25.9)	82.3 (11.9)	30.1 (29.4)	26.5 (29.8)	p < 0.05
Dengler et al.	73.0 (13.8)	67.8 (20.3)	77.7 (11.3)	34.4 (23.9)	31.8 (29.8)	p < 0.05
Vanachlocha et al.	7.5 (1.4)	7.2 (1.8)	7.8 (1.4)	2.4 (1.1)	1.6 (0.8)	p < 0.05

Table 2: ODI score

Studies	ODI CM group (SD)		ODI MISJF group (SD)			MISJF vs CM
	Pre	Post (6 months)	Pre	Post (6 months)	Post (24 months)	
Polly et al.	56.0 (14.0)	51.6 (18.8)	57.2 (12.8)	29.9 (20.5)	28.5 (21.9)	p < 0.05
Dengler et al.	55.6 (13.7)	50.2 (17.2)	57.5 (14.4)	32.0 (18.4)	30.2 (19.0)	p < 0.05
Vanachlocha et al.	38.3 (7.9)	38.9 (8.3)	41.7 (6.8)	25.2 (5.7)	18.4 (5.3)	p < 0.05

Results

Figure 1: Comparison between MISJF and CM for the outcome of VAS-pain after 6 months

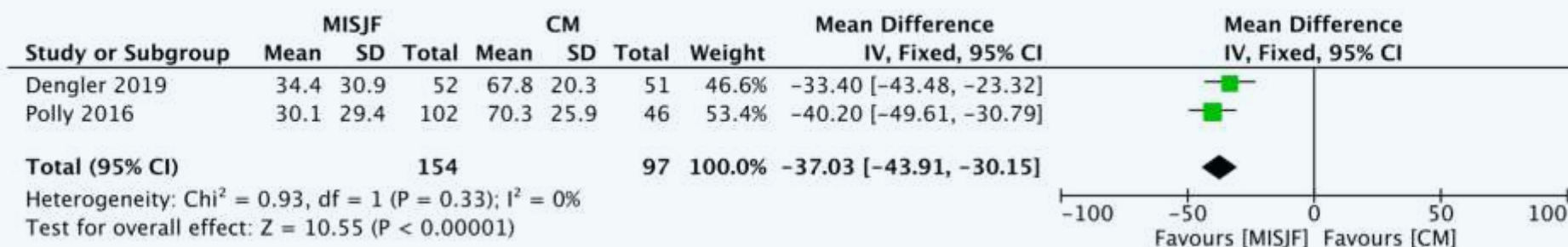
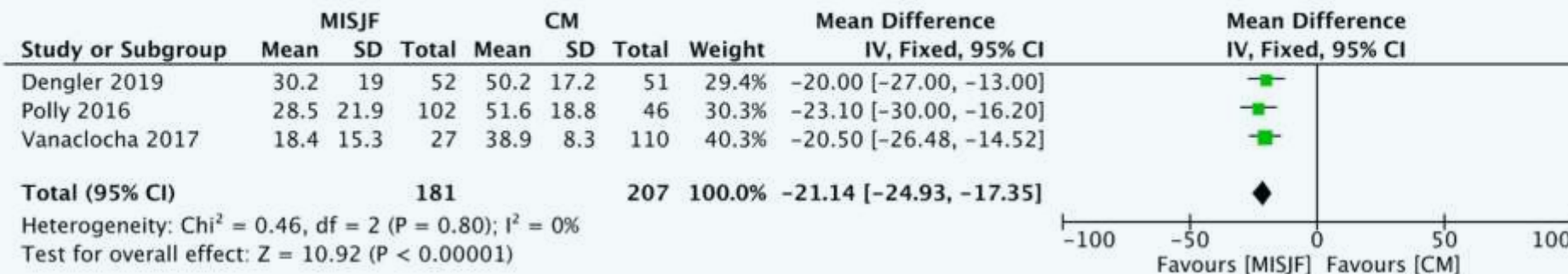
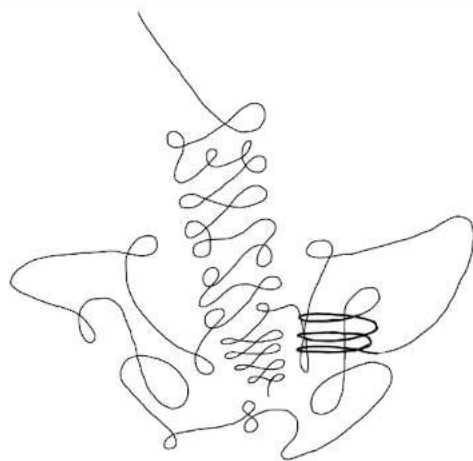


Figure 2: Comparison between MISJF and CM for the outcome of ODI after 6 months



Conclusion

- This systematic review and meta-analysis suggests that MISJF, using cannulated triangular, titanium implants, is more effective and cost-effective than conservative management in reducing pain and disability in patients with SIJ dysfunction. Further well-powered, independent research is needed to improve the overall evidence.



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