The Hip-Spine Syndrome: A Systematic Review of Outcomes After Primary Hip Arthroscopy with Concomitant Low Back Pathology

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INTRODUCTION

There is a paucity of aggregate literature reporting on outcomes of patients with low back pathology after undergoing primary hip arthroscopy for the treatment of FAIS.

AIM

The purpose of this study is to review outcomes of patients with low back pathology after undergoing primary hip arthroscopy for the treatment of FAIS.

METHOD

PubMed, Cochrane, and Scopus were queried in June 2022 to conduct this systematic review using the following terms: ("hip" OR "femoroacetabular impingement") AND ("arthroscopy" OR "arthroscopic") AND ("spine" OR "lumbar" OR "sacral" OR "hip-spine" OR "back") AND ("outcomes"). Articles were included if they reported on outcomes of patients undergoing hip arthroscopy with concomitant low back pathology. The review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) criteria. Case reports, opinion articles, review articles, and technique articles were excluded from this study. Forest plots were created to analyze pre – and post-operative outcomes among patients with and without self-reported low back pain.

Figure 1. Article Selection Process

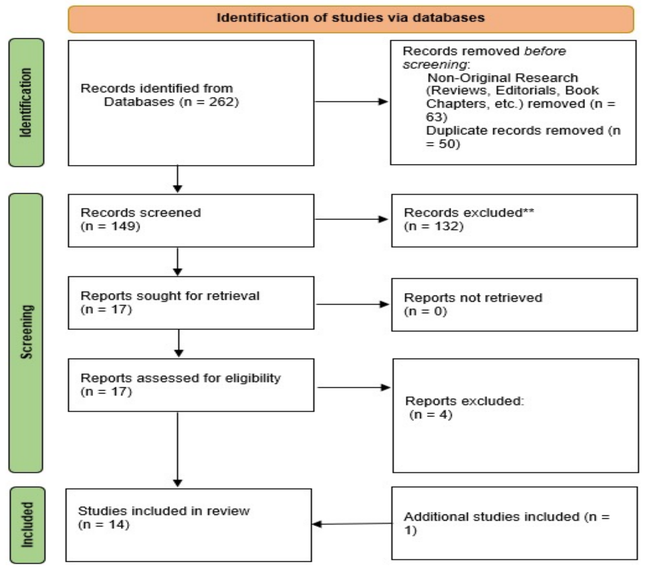
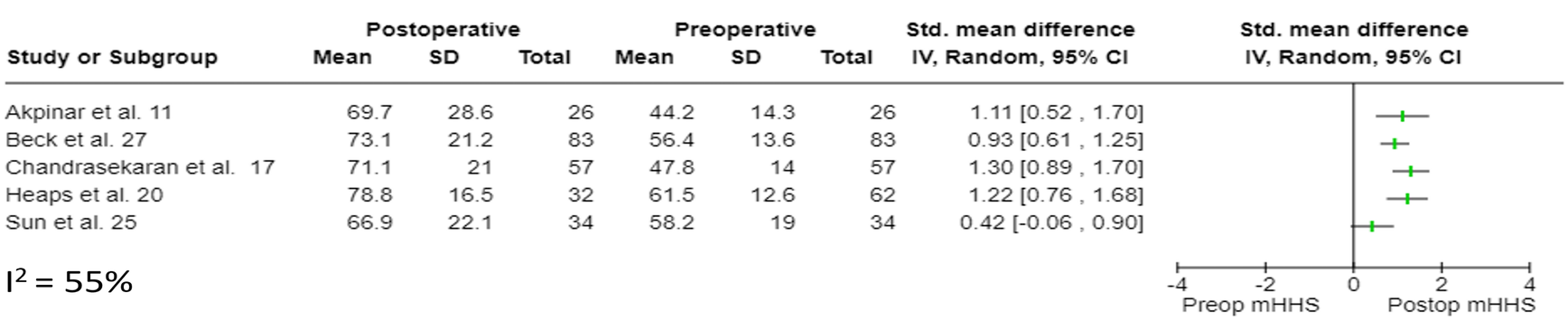


Table 1. Secondary Surgery Rates for Hip-Spine and Non-Hip-Spine Groups

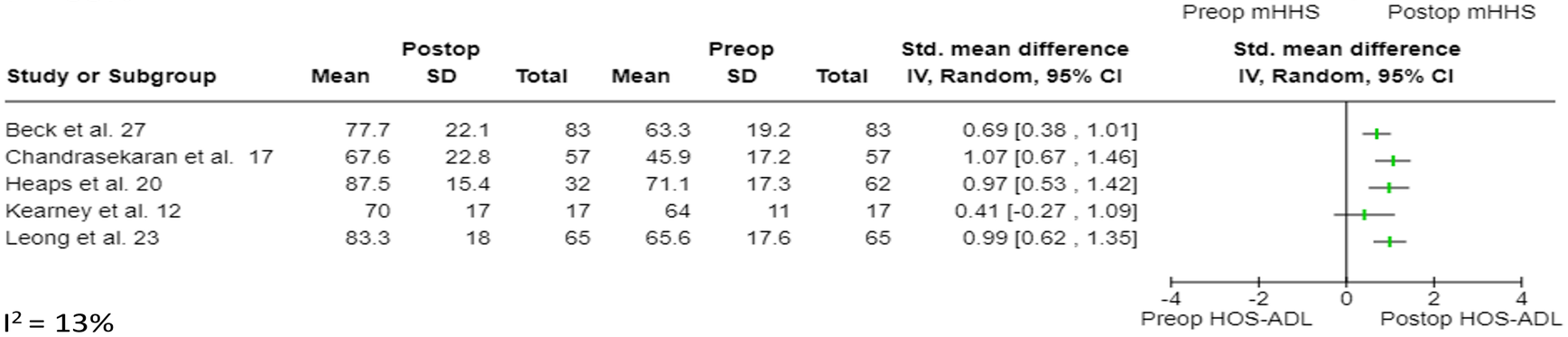
Author and Year	Study Period	Hips (n)	Average Follow-up (Range or SD), years	Secondary Hip Preservation Procedures		Average Time to Secondary Hip Preservation Procedure, months		Conversion to THA/HR		Average Time to Conversion, months		Overall Secondary Surgery Rate	
Akpinar et al. 2021[11]	2009-2015	52 (26 HSC; 26 Control)	2	Hip-Spine	7 (27)	Hip-Spine	53.6 ± 7.2	Hip-Spine	0 (0)	NR		Hip-Spine	7 (27)
				Control	1 (4)	Control	60.5 ± 7.9	Control	2 (8)			Control	3 (12)
Haskel et al. 2020[20]	2010-2016	149 (38 HSC; 111 Control)	2	Hip-Spine	1 (3)	NR		Hip-Spine	8 (21)	NR		Hip-Spine	9 (24)
				Control	9 (8)			Control	11 (10)			Control	20 (18)
Chandrasekaran et al. 2019[18]	2008-2012	114 (57 Hip-Spine; 57 Control)	Hip-Spine 27.6 mo (20.1-43.4)	Hip-Spine	3 (5)	Hip-Spine	12.3 (2.76-17.3)	Hip-Spine	1 (2)	Hip-Spine	22.4	Hip-Spine	4 (7)
			Control 28.5 mo (17.3-49.6)	Control	1 (2)	Control	13.4	Control	0 (0)	Control	-	Control	1 (2)
Jimenez et al. 2022[23]	2009-2018	168 (42 Hip-Spine; 126 Control)	Hip-Spine 53.2 ± 31.6 mo	Hip-Spine	2 (4.8)	Hip-Spine	19.1 ± 7.8	Hip-Spine	0 (0)	Hip-Spine	-	Hip-Spine	2 (4.8)
			Control 56.8 ± 25.5 mo	Control	13 (10.3)	Control	22.5 ± 19.1	Control	4 (3.2)	Control	50.6 ± 56.8	Control	17 (13.5)

Values reported as average ± standard deviation or (% or n (%)) unless otherwise indicated. NR; not recorded. THA; total hip arthroplasty. HR; hip resurfacing. SD; standard deviation.

Figure 2. Forest plots for mHHS and HOS-ADL comparing Hip-Spine and Non-Hip-Spine groups



$I^2 = 55\%$



$I^2 = 13\%$

RESULTS

- Fourteen studies reporting on 750 hips with hip-spine syndrome and 1800 hips without hip-spine syndrome were included
- Two studies were Level II evidence, ten studies were Level III evidence, and two studies were Level IV evidence
- Average follow-up for the hip-spine group ranged from 1 year to 53.2 months
- Hip-spine syndrome pathology included lumbar spinal stenosis, lumbar spine disease, lumbosacral transitional vertebrae, previously lumbar spine surgery, limited lumbopelvic mobility, lumbosacral pathology, sacroiliac joint abnormalities and patient-reported low back pain
- Four studies in the hip-spine group and 8 studies in the non-hip-spine group reported their cohorts achieving minimal clinically important difference rate of at least 80% in one patient-reported outcome
- Eight studies reported that patients with hip-spine syndrome was associated with inferior outcomes or clinical benefit when compared to patients with no hip-spine syndrome
- Overall secondary surgery rates for the hip-spine group ranged from 4.8% - 27.0%

CONCLUSIONS

Patients undergoing primary hip arthroscopy with concomitant low back pathology can expect favorable outcomes, but outcomes are superior in patients undergoing hip arthroscopy for FAI alone compared to FAI with concomitant low back pathology.