Peoperative Hip Injection Response Does Not Reliably Predict 2-Year Postoperative Outcomes Following Hip Arthroscopy for Femoroacetabular Impingement

Alan Zhang¹, Lejla Pepic, Alexander Reuben Markes, Hayden Marcus Sampson, Kylen Keoni Jardin Soriano, Stephanie Erin Wong

¹UCSF Orthopaedic Institute

INTRODUCTION: Preoperative intra-articular hip injections are a frequently utilized diagnostic and therapeutic modality for patients undergoing hip arthroscopy for FAIS. However, studies have failed to establish a clear relationship between preoperative injection response and ultimate postoperative outcomes. The purpose of this study is to determine whether response to preoperative local anesthetic or corticosteroid intra-articular injections can predict 2-year postoperative outcomes in patients undergoing hip arthroscopy for FAIS. In doing so, we aim to compare responders, who experience even temporary improvement after injection, to non-responders, who have no improvement at all, while also differentiating between the outcomes associated with injection type, including corticosteroid versus local anesthetic injections, in a matched cohort analysis.

METHODS: This was a retrospective analysis of patients undergoing hip arthroscopy for FAIS at a single institution from 2014-2020. Patients who underwent preoperative intra-articular hip injection were classified based on injection type (local anesthetic, corticosteroid) and whether they experienced pain relief following injection (responders, non-responders). Responders were matched 2:1 by age, BMI, and sex with non-responders. Patient reported outcomes (PROs) including Hip Disability and Osteoarthritis Outcome Score (HOOS), 12-item Short-Form Survey mental (SF-12-MCS) and physical component summary (SF-12-PCS) and visual analogue scale (VAS) pain were collected preoperatively and 2-years postoperatively. Mean score change and Minimal Clinically Important Difference (MCID) achievement were calculated and compared between groups.

RESULTS: The matched cohort included 126 total patients (42 non-responders, 84 responders; 74.6% female; mean \pm SD age: 30.9 \pm 9.9 years; BMI: 24.7 \pm 3.7 kg/m²) with no differences in demographic or radiographic hip variables. Both groups demonstrated significant 2-year postoperative score improvements across all PROs, except SF-12-MCS, which remained unchanged. There was no difference in mean score change or MCID achievement across all PROs between corticosteroid injection responder and non-responder groups. Significant ceiling effects were most readily apparent among the injection responders group with greater percentages of patients achieving maximal 2-year postoperative survey scores (36.9% in HOOS-ADL, 19.0% in HOOS-Pain, 15.5% in HOOS-QoL, and 32.1% in HOOS-Sport).

DISCUSSION AND CONCLUSION: Preoperative injection response with either corticosteroid or local anesthetic did not predict 2-year outcomes after hip arthroscopy in patients with FAIS. Given these findings, we caution against the use of injection response as an isolated variable in the prediction of postoperative outcomes and determination of surgical candidacy in FAIS treatment.

	Ownill	Injection Responders (n = 84)	Injection Non-Responders (n=47)			Local Anosthetic Responders (n - 20)	Local Appsthetic Non-Responders (n = 19)			MCID		Percent Attained*		
	(n = 126)			P Velue*	HOOS-ADL	21.0 ± 19.8	38.4 + 22.1	0.014		Local Anesthetic	Local Anesthetic	Local Anesthetic	Local Anesthetic	
enorezeki: Veriables			0. 10		HOOS-Pain	24.9 ± 18.8	41.4 ± 18.9	0.029		Responders	Non-Responders	Respenders	Non-Responders	P Vi
x, male/female	32/94	22/62	10/32	0.772	HOOS-ONI	38.1 + 28.8	54.3 + 21.5	0.054	HOOS-ADL	9.9	11.1	70.0	84.2	0.
c, v. mean ± SD	30.9 ± 9.9	31.5 ± 9.7	29.7 ± 10.2	0.358	1000 0	25.0 - 21.0	111.001	0.004	HOOS-Pain	9.4	9/4	90.0	100.0	0.
ly mass index, mean + SD	34.7 ± 3.7	24.6 ± 3.8	24.8 ± 3.5	0.845	nuus-spen	29.8 ± 31.8	30.3 ± 24.0	0.006	HOOS-QoL	14.4	11.7	85.0	100.0	0.3
ie involved, right/left	95/90	45/29	21/21	0.705	HOOS-Symptoms	25.3 ± 22.0	34.7 ± 20.4	0.171	HOOS-Sport	15.9	12.3	80.0	100.0	0.1
nnin grade				0.527	SF-12 MCS	(-)1.5 ± 16.0	(-)1.4 ± 19.8	0.987	HOOS-Symmany	11.0	10.2	75.0	84.2	0.4
- 0	68	47	21		SF-12 PCS	15.0 ± 18.7	24.0 ± 12.5	0.090	SE 12 MCS	8.0	0.0	26.2	11.6	1.0
1	58	37	21		VAS Pain	(-3) 7 + 3 1	6.34.4 + 2.6	0.005	Se - La meta	0.0		2003	51.0	
EA, mean ± SD	33.5±5.3	33.8 ± 5.2	32.9±5.3	0.353		Continuenter and Researchers (a 64)	Continuente al New Researchers (n - 12)		SP-12 PCS	9,4	6.3	68.4	89.5	0.
an ange, and a sto	2010 - 201	54.5 - 545	21.000.00	0.546	10000 4.04	011.1.101	20.4 - 22.2	0.137	VAS Pain	1.6	1.3	55.0	89.5	0.0
val Tear	125	83	43		TRACTOR DE L	41.1 - 19.1	2074	0.150						
etabular Certilene orade, modian	2	2	2		HOOS-Pain	25.2 ± 21.4	28.0 ± 19.1	0.581		Contractor	10 Contractor	Fercen	Gathering	-
and Cathlen and and in					HOOS-QaL	40.7 ± 28.3	39.4 ± 18.0	0.835		Corticosteretta	Controla	Corucosterotu	Contrasteriou	
val Gode radia	2	2	2		HOOS-Sport	36.0 ± 29.2	38.3 ± 30.5	0.751	10005 1.01	Responders	Non-Responders	Kespenders	Not-Respectors	<u><u> </u></u>
wal Remain	124		41		HOOS-Symptoms	22.2 ± 20.8	22.6 ± 18.0	0.938	HOOS-ADL	9.0	11.1	71.9	73.9	1.0
penlar Nepair	26	12	14		SE42 MCS	11+150	11+119	0.992	HOOS-Pain	10.7	9.6	64.1	82.6	0.1
crafacture	4	3	1		SE-12 PCS	171+158	166+13.0	0.903	HOOS-QoL	14.2	9.0	78.1	95.7	0.1
ondronlasty		1	1		MAR Tele	(126) 27	(12.7.1.7.6	0.108	HOOS-Sport	14.6	15.2	76.6	82.6	0.1
testing decompression	5	ŝ	2		VAS Felli	(-)2.0 % 2.1	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	0.108	HOOS-Symptoms	10.4	9.0	65.6	78.3	0.3
M decompression	126	84	42		ADL, Activities of Dair	Living; HOOS, Hip disability and Ostece	intintis Outcome Score; MCS, Mental Compo	ment Summary;	SE(12 MCS	7.5	6.0	29.7	14.8	0.7
or decompression	92	60	32		PUS, Physical Compone	nt Summary; QoL, Quality of Life; SF-12,	, 12-item Short-Form Health Survey; VAS, vi	suat anatog	SE 12 BCS	7.9	4.5	65.6	71.0	
bral debridement	1	1	0		scale.								12.9	0.0