## The Temporal Effect of Corticosteroid Injections Into Large Joints Prior to Trigger Finger Release on Infection

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INTRODUCTION: Trigger fingers are common in adults, where open surgical release of the annular pulley is the definitive treatment, local corticosteroid injections have also demonstrated success. However, studies suggest that patients who receive local corticosteroid injections into the flexor sheath up to 90 days prior to open surgery are at increased risk of post-operative infection. Despite this association, the possible link between corticosteroid injections into large joints prior to trigger finger release remains unexplored. Therefore, this study aimed to provide large-scale analyses of infections and complications for patients who underwent trigger finger release after receiving a non-local corticosteroid injection into a large joint, such as the shoulders, hips, or knees. We specifically assessed 90-day: (1) requirement for antibiotics; (2) infections rates; as well as (3) irrigations and debridement.

METHODS: A review of a national, all-payer administrative claims database (PearlDiver) was conducted to examine patients who did not receive (n = 10,000) and those who received corticosteroid injections two (n = 1,185), four (n = 1,058), or six weeks (n = 874) prior to trigger finger release between January 1, 2010 and December 31, 2019. This source utilizes International Classification of Disease (ICD) as well as Current Procedural Terminology (CPT) codes. The primary outcomes of interest were 90-day requirement for antibiotics, diagnoses of infection, as well as irrigations and debridement. Multivariate logistic regressions were used to calculate and compare between groups using unadjusted odds ratios (ORs) with 95% confidence intervals (CIs).

RESULTS: No trends were found regarding antibiotic requirements, infection diagnoses, as well as irrigations and debridement within 90 days for patients who received corticosteroid injections two, four, or six weeks prior to open trigger finger release. However, alcohol abuse, diabetes mellitus, and tobacco use were demonstrated to be independent risk factors for requiring antibiotics as well as irrigation and debridements (all ORs > 1.13, all p < 0.001).

DISCUSSION AND CONCLUSION: These large analyses of patients who underwent trigger finger release after receiving a corticosteroid injection into a large joint, such as the shoulders, hips, or knees, two, four, or six weeks prior demonstrates no association regarding antibiotic requirements, infection diagnoses, as well as irrigations and debridement within 90 days. However, and importantly, alcohol abuse, diabetes mellitus, and tobacco use were demonstrated to be independent risk factors for requiring antibiotics as well as irrigation and debridements. While the indications and comfort levels for individual surgeons or practices may vary, optimizing these comorbidities prior to surgery may be an important goal discussed with patients to lower the risk of post-operative infections.

Table I. Democrathics and baseline characteristics																	Table	Table 4 Multipation builds communication for associated risk florters										
The Consequence of the constant					Table 1. Doursale analysis of post-operative outcomes of eight inder means					Table 3. Odds ratio of post-operative outcomes of tragger targer release						faind a between the lat				Table 5. Multivariate logistic regression for independent risk								
	Central	Injection Two- Weeks Prior to Surgery	Injection Between Two- In	Injection Between Four- to Siz-Weeks Prior to Surgary	P- value		Control Caluert n = 33,000 (%)	Injection Two-Weeks Prior to Surgery	Injection Between Two- to Faur-Weeks Prior to Surgery	Injection to Between dia Four-ta Six- Weeka Prior to Surgery			Cortisone Injection Two-Wooks Prior to Surgery		to Cortis	Cartisane Injection Two- to Four-Weeks Prinr to Sargery		ne Injection 1 Sin-Works			legentian increaseds prior in the service prior in the surgery surgery surgery		factors					
	n = 13,000 (%)	n = 1,385 (%)	Prior to Surgery a = 1,858 (%)								p-value				Feer-			to Surgery	10-Da	y Antibietics	OR* 195-CI pr	the OR* 99% CI	produce 0	R* \$5% Cl p-railar	00 Day Antibiotics	OP*	059/ (71	a volue
															10				Ma	Male sex.	871 648-1.84 6087 638 0.57-1.28 8.471		8,471 0	0.84 8.55-1.28 8.413	50-Day Antonoucs	OK.	95% CI	p-value
				E = 814 (%)				4-1,0000	n = 1,858 (%)	n = 874 (%)			OR	95% CI	I OR	95% CI	OR	95% CI	A6	er <33 years	1.30 0.46-3.10 0.	88 641 0351.38	8.224 0	52 6.27-2.43 6.888	141	0.00	0.00.0.01	-0.001
Age (SD)	62 (10.7)	64 (9.6)	64 (9.9)	63 (9.8)	0.155	99-Day Complicati	065					90 Day Conselication							Ab	oshol Nhuse	1.41 0.66.2.70 0.	23 1.81 0.843.43	8,306 1	35 6.52.3.05 6.500	Male sex	0.92	0.90-0.94	< 0.001
Sea					=10.001	Actibuterials	1139 (11 39)	161/14/20	115(12.36)	133 (15.22)	+0.000	Jo bill Completion							Di	abstas Mallitus	1.30 6.99-1.84 6.	28 113 0.754.81	0.326 1	18 E80-LN E400		0.00	0.00 1.00	0.051
Ecrale	6.647 (56.47)	M8/7165	248 (20.29)	605 (89 14)					,			Adductionals	1.29	29 1.09-1.	54 1.14	.14 0.94-1.38	1,40	115-1.39	C6	with	6.91 0.651.31 D	48 6.81 0.551.24	8.278 0	88 6401.00 6.002	Age <55 years	0.95	0.90-1.00	0.054
						Matchine 56 (8.56)	•	•		0360	Infection	1.06	0.48-2.3	32 0.67	0.24-1.86	0.82	0.30-2.26	Toherra Line	Avera Elar	122 625141 6	28 146 146.211	1.645 1	E 626152 8462			100110		
Mate	3,358 (33,58)	336 (28.35)	309 (29 21)	258 (30.66)		Leagueer	Lagoout					diagnoses							at the	-14.5					Alcohol Abuse	1.10	1.06-1.15	<0.001
Alcobal	441 (4.41)	60 (5.06)	22(4.6)	36 (4.12)	0.711	14cD	377 (3.77)	40 (5.56)	23 (2.17)	26 (2.97)	0.042	160	0.83	0.64-1.7	14 0.52	0 37-0 89	0.75	0.12.1.12										
Abuse						*Censored in accor	dence with the detei	basa confidentialit	y agreement.										96	ae sen	1.69 035-525 0.	22 638 039430	1.29 1	3) 68/4/38 6/00	Diabetes Mellitus	1.15	1.13-1.17	< 0.001
CCI > 3	1,366 (13.66)	148 (12.49)	170(16.07)	140 (16.02)	0.001	I&D: impations an	debridensent					*Referent group: Con	rol cohort						A4	sobel Abase	143 633429 6.	01 625 135-164	1.000 0	77 E05438 EX08				
DM	5.872 (50.72)	659 (55.61)	559 (52.84)	454 (53.09)	0.007							OR: BEE HERE; C.E. CE	ancesce in	ervit, tacu	/: mgaxes	s and ocements	ers.		Dia	dotas Mallitas	131 046-241 0	29 147 0.66-3.86	8.411 2	39 100-633 E661	Obesity	1.18	1.16-1.21	< 0.001
	1 100 100 100				-0.001														Cla	outy	1.37 671-2.66 6.	61 1.01 0.40-2.53	8.977 1	84 E46-2.48 E921				
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Tobacca Use	3,287 (37.87)	463 (39.87)	421 (39.79)	342 (39.13)	0.513														40	0 POR odds re	tic: \$9% Ch 55% coulder	e isterials; MD impe	ice and debride	nesi	Tobacco ese	1.10	1.14-1.10	-0.001
327 SD: steadard deviatine; CCL Charlson Consorbidity Index; 338 DM: disbetes mellius 339																								Injection two weeks prior	1.27	1.06-1.51	0.007	

Alcohol Abuse	1.10	1.06-1.15	< 0.001
Diabetes Mellitus	1.15	1.13-1.17	< 0.001
Obesity	1.18	1.16-1.21	< 0.001
Tobacco Use	1.16	1.14-1.18	< 0.001
Injection two weeks prior	1.27	1.06-1.51	0.007
Injection four weeks prior	1.08	0.89-1.29	0.421
Injection six weeks prior	1.33	1.10-1.60	0.002
)-Day I&D			
Male sex	1.12	1.09-1.16	< 0.001
Age <55 years	1.21	1.11-1.31	< 0.001
Alcohol Abuse	1.14	1.06-1.21	< 0.001
Diabetes Mellitus	1.19	1.16-1.23	< 0.001
Obesity	1.13	1.10-1.17	< 0.001
Tobacco Use	1.17	1.14-1.21	<0.001
Injection two weeks prior	0.90	0.63-1.23	0.521
Injection four weeks prior	0.52	0.34-0.77	0.002
Injection six weeks prior	0.72	0.48-1.05	0.104

Referent group: no prior injection (control) 'OR: odds ratio; 95% CI: 95% confidence intervals; I&D: