Primary trigger finger corticosteroid injections: Is triamcinolone superior to betamethasone?

Justin Kistler, Jeremiah Alexander Adams, Bryan A Hozack, Jonas Leif Matzon

INTRODUCTION:

Trigger finger (TF), or stenosing tenosynovitis, is one of the most common conditions seen by hand surgeons. Traditionally, non-operative management with corticosteroid injections (CSIs) is considered to be the first line treatment for TF. However, it remains unclear what compound, concentration, and volume confers the most efficacious outcome. The purpose of this study was to compare the failure rate of primary trigger finger CSIs using triamcinolone versus betamethasone.

METHODS:

This was a retrospective cohort study of all primary trigger finger CSIs given by a single fellowship-trained, orthopaedic hand surgeon over two 8-month periods. From June 2022 through January 2023, all trigger finger CSIs were performed with triamcinolone (1mL, 40mg/mL). From June 2023 through January 2024, all trigger finger CSIs were performed with betamethasone (1mL, 6mg/mL). Patient charts were reviewed at 1 year following the CSI to determine the failure rate of the CSI. Failure was defined as re-intervention with either a repeat CSI or TF surgery. For those patients who failed the primary CSI, time to failure was recorded.

RESULTS:

The two cohorts were similar in terms of finger numbers, finger laterality, and finger distribution (Table 1). In the triamcinolone cohort, 284 fingers in 238 patients received a primary trigger finger CSI. Within a year, 47 fingers (16.5%) had undergone either a repeat CSI [43 (15.1%)] or trigger release surgery [4 (1.4%)]. In the betamethasone cohort, 255 fingers in 223 patients received a primary trigger finger CSI. Within a year, 89 fingers (34.9%) had undergone either a repeat CSI [73 (28.6%)] or trigger release surgery [16 (6.3%)]. The percentage of patients undergoing repeat intervention was significantly greater in the betamethasone cohort ($p<0.001$). Moreover, the betamethasone cohort had a significantly shorter mean time to failure as compared to the triamcinolone cohort (167 days vs 273 days, $p<0.001$).

DISCUSSION AND CONCLUSION:

For primary trigger fingers, patients treated with a betamethasone CSI were significantly more likely to undergo a repeat CSI or trigger release surgery within 1 year of the CSI compared to patients treated with a triamcinolone CSI. Betamethasone CSIs resulted in a significantly shorter time to failure than triamcinolone CSIs. At 1 year follow-up, triamcinolone CSIs are superior to betamethasone CSIs in the treatment of primary trigger fingers. Further research is required to confirm that these results persist at longer follow-up.

Figure 1: Trigger finger repeat intervention rate as a function of time. The shaded areas represent 95% confidence intervals.

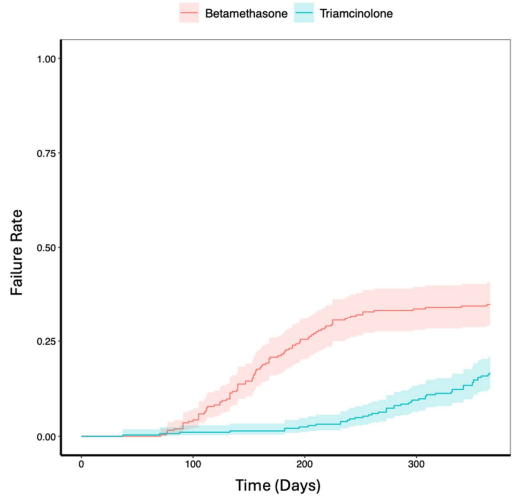

Table 1: Cohort characteristics and results

	Triamcinolone Cohort	Betamethasone Cohort	P Value
Number of Fingers	284	255	
Laterality (%):			1.000
Left	44.4%	44.3%	
Right	55.6%	55.7%	
Finger Distribution (%):			0.132
Thumb	25.0%	31.4%	
Index finger	10.2%	9.0%	
Long finger	33.8%	32.9%	
Ring finger	27.5%	20.4%	
Small finger	3.5%	6.3%	
Repeat Intervention (%):			
None	83.5%	65.1%	<0.001
Repeat CSI or Surgery	16.5%	34.9%	<0.001
Repeat CSI	15.1%	28.6%	<0.001
TF Surgery	1.4%	6.3%	0.003
Mean time to repeat intervention in days (range)	273 (37 - 365)	167 (71 - 363)	<0.001