Determining the Optimal Dosage for Corticosteroid Injection in Trigger Finger

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INTRODUCTION: Corticosteroid injection is the mainstay of initial nonsurgical treatment for trigger finger (stenosing tenosynovitis) but despite substantial clinical experience with this treatment, there is minimal available evidence as to the optimal corticosteroid dosing. The purpose of this study is to compare the efficacy of three different injection dosages of triamcinolone acetonide for the treatment of trigger finger.

METHODS:

Following approval by the Institutional Review Bored, adult patients diagnosed with a trigger finger were prospectively enrolled and treated with an initial triamcinolone acetonide injection of either 5mg, 10mg, or 20mg. Injection dose was determined based on which surgeon was treating the patient. Patients were then followed longitudinally over a six-month period. Patients were assessed for duration of clinical response, clinical failure, VAS pain scores, and QuickDASH scores.

RESULTS:

A total of 146 patients (163 trigger fingers) were enrolled over a 26-month period from January 2019 to March 2021. Mean duration of symptoms was 4.5 months before presentation [Table 1]. At six month follow up, injections were still effective (without recurrence of significant symptoms, need for secondary injection, or progression to surgery) in 52% of the 5mg group, 62% of the 10mg group, and 79% of the 20mg group (p=<0.05). VAS pain scores at final follow up improved by 2.2 in the 5mg group, 2.7 in the 10mg group, and 4.5 in the 20mg group (p>0.05). QuickDASH scores at final follow up improved by 11.8 in the 5mg group, 21.5 in the 10mg group, and 28.9 in the 20mg group (p>0.05) [Table 2]. The clinical effectiveness at 6 weeks, 3 months, and 6 months is demonstrated graphically in Figure 1.

DISCUSSION AND CONCLUSION:

Corticosteroid injection with triamcinolone acetonide is a safe and effective treatment for trigger finger, but minimal evidence exists to guide optimal dosing. When compared to 5mg and 10mg doses, a 20mg dose was found to have a significantly higher rate of clinical effectiveness at 6 month follow up. VAS pain scores and QuickDASH scores were not significantly different between the three groups.

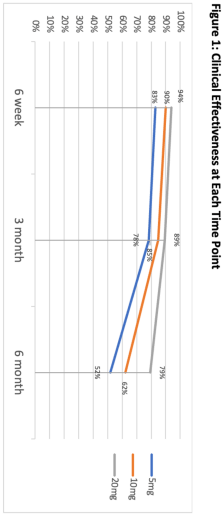

Figure 1: Clinical Effectiveness at Each Time Point

Table 1: Baseline Demographics

		5mg	10mg	20mg	Total
	Patients	44	57	45	146
	Digits	52	59	52	163
	Duration of Symptoms (months)	5.7	4.1	4.5	4.5
Comorbidities	Diabetes	11	4	4	19
	Rheumatoid	3	1	0	4
Laterality	Right	34	30	28	92
	Left	18	29	24	71
Digit	Thumb	9	22	19	50
	Index	3	3	2	8
	Middle	23	11	17	51
	Ring	15	19	12	46
	Small	2	4	2	8
Grade	I	8	3	4	15
	II	25	25	14	64
	III	18	29	27	74
	IV	1	2	7	10
Initial QuickDASH		28.7	33.2	36.1	32.6
Initial VAS		4.8	5.1	6.4	5.4

Table 2: Outcomes Data

Baseline	5mg	10mg	20mg	p value
Patients	44	57	45	
Fingers	52	59	52	
Duration of Symptoms	5.7	4.1	4.5	
Initial VAS	4.8	5.1	6.4	
Initial QuickDASH	28.7	33.2	36.1	
6 Week	**5mg**	**10mg**	**20mg**	**p value**
VAS	1.4	0.6	1.0	
Δ VAS	-3.5	-4.5	-5.4	*0.03
QuickDASH	6.8	5.1	6.1	
Δ QuickDASH	-21.9	-28.1	-30	0.27
Still Effective	83.0%	90.0%	94.0%	0.21
3 Month	**5mg**	**10mg**	**20mg**	**p value**
VAS	1.6	1.0	0.6	
Δ VAS	-3.2	-4.0	-5.8	*0.01
QuickDASH	5.6	8.5	2.9	
Δ QuickDASH	-23.1	-24.7	-33.3	*0.01
Still Effective	78.3%	84.7%	89.4%	0.35
6 Month	**5mg**	**10mg**	**20mg**	**p value**
VAS	2.7	2.4	1.9	
Δ VAS	-2.2	-2.7	-4.5	0.35
QuickDASH	16.9	11.8	7.3	
Δ QuickDASH	-11.8	-21.5	-28.9	0.19
Still Effective	51.7%	62.1%	79.5%	*0.04