

A Comparison of the Results of Platelet-Rich Plasma Injection Versus the Results of Corticosteroid Injections in De-Quervain Tenosynovitis

Ahmed T Ashour 1,Ahmed Ashour, Ahmed Bassiony

Trauma and orthopedic department,Alexandria Faculty of medicine, Egypt



Background

De Quervain tenosynovitis (DQT) is a condition that affects the first extensor compartment of the wrist, resulting in stenosing tenosynovitis. This work aimed to evaluate the effects of platelet-rich plasma (PRP) injection in the treatment of DQT in comparison with corticosteroid (CS) injections.

Methodology

We prospectively compared the results of corticosteroids injection versus PRP injection in patients with De-Quervain Disease. The study included 40 patients: They were divided randomly into two equal groups : group A(odd numbered patients); PRP and group B(Even numbered patients); Corticosteroids. The mean age was 43.40 +-11.83 In the PRP group, sixteen patients (80%) were females, 60% were housewives, and eighteen patients (90%) were right hand dominant. In the CS group, seventeen patients (85%) were females, 70% were housewives, and nineteen patient(95%) were right hand dominant. All patients were assessed after 2 weeks and after 6 months according to Quick Disabilities of shoulder, Arm, Hand (Quick Dash-9) score, Visual analogue score (VAS),and according to presence of complications

REFERENCES

1. A modified QuickDASH-9 provides a valid outcome instrument for upper limb function. Gabel CP, Yelland M, Melloh M, Burkett B. BMC Musculoskelet Disord. 2009;10:161. doi: 10.1186/1471-2474-10-161.
2. The role of platelet rich plasma in comparison with corticosteroids in the treatment of De Quervain tenosynovitis. EL Sheikh EA, Mahmoud SA, Abd El-Rahim MM. Med J Cairo Univ. 2020;88:141–148
3. Corticosteroid injection with or without thumb spica cast for de Quervain tenosynovitis. Mardani-Kivi M, Karimi Mobarakeh M, Bahrami F, Hashemi-Motlagh K, Saheb-Ekhtiari K, Akhoondzadeh N. J Hand Surg Am. 2014;39:37–41. doi: 10.1016/j.jhsa.2013.10.013

Table 1 : Comparison between the two studied groups according to VAS

VAS	Group I (n = 20)	Group II (n = 20)	U	p
Before injection				
Min. – Max.	5.0 – 9.0	6.0 – 9.0	192.50	0.841
Mean ± SD.	7.40 ± 1.23	7.35 ± 1.23		
Median (IQR)	7.0 (6.5 – 8.5)	7.0 (6.0 – 8.5)		
After injection				
2 weeks				
Min. – Max.	4.0 – 9.0	0.0 – 7.0	48.50*	<0.001*
Mean ± SD.	6.0 ± 1.72	3.0 ± 2.0		
Median (IQR)	6.0 (4.50 – 7.5)	3.0 (2.0 – 3.50)		
6 months				
Min. – Max.	0.0 – 7.0	2.0 – 8.0	19.0*	<0.001*
Mean ± SD.	1.30 ± 1.63	5.55 ± 1.57		
Median (IQR)	1.0 (0.0 – 2.0)	5.0 (4.5 – 7.0)		
Improvement (before vs 2 weeks)	↓1.40 ± 0.99	↓4.35 ± 1.79	39.0*	<0.001*
Improvement (before vs 6 months)	↓6.10 ± 1.77	↓1.80 ± 1.58	17.50*	<0.001*
% of improvement (before vs 2 weeks)	↓19.82 ± 13.87	↓60.30 ± 25.81	41.50*	<0.001*
% of improvement (before vs 6 months)	↓82.89 ± 20.25	↓23.91 ± 20.21	14.50*	<0.001*

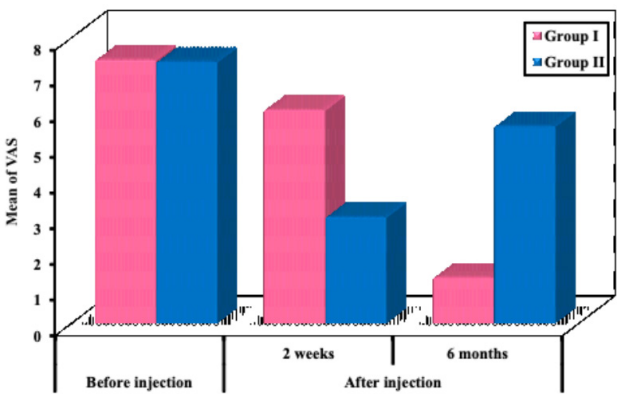
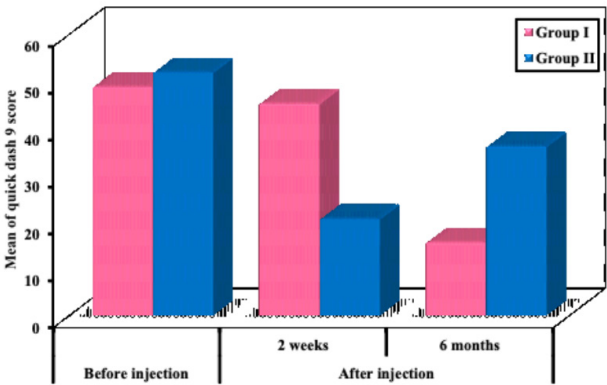


Table (II): Comparison between the two studied groups according to QuickDASH-9 score

Quick Dash 9 score	Group I (n = 20)	Group II (n = 20)	U	p
Before injection				
Min. – Max.	25.50 – 74.25	28.30 – 82.50	177.0	0.547
Mean ± SD.	48.95 ± 15.37	52.07 ± 17.05		
Median (IQR)	54.20 (35.25 – 55.9)	55.20 (36.35 – 65.9)		
After injection				
2 weeks				
Min. – Max.	20.50 – 70.00	9.10 – 65.50	43.0*	<0.001*
Mean ± SD.	45.37 ± 15.30	20.77 ± 15.00		
Median (IQR)	49.10 (31.5 – 55.3)	14.15 (10.65 – 23.3)		
6 months				
Min. – Max.	6.80 – 72.70	9.10 – 73.20	52.0*	<0.001*
Mean ± SD.	15.74 ± 14.83	36.23 ± 19.95		
Median (IQR)	11.25 (9.1 – 16.0)	30.35 (20.3 – 51.5)		
Improvement (before vs 2 weeks)	↓3.59 ± 4.01	↓31.3 ± 16.7	20.0*	<0.001*
Improvement (before vs 6 months)	↓33.22 ± 16.98	↓15.84 ± 13.31	78.0*	0.001*
% of improvement (before vs 2 weeks)	↓7.64 ± 9.72	↓60.40 ± 22.27	21.0*	<0.001*
% of improvement (before vs 6 months)	↓67.71 ± 22.04	↓32.96 ± 24.04	43.0*	<0.001*



Results

The mean difference in VAS score after 2 weeks was ↓1.40 ± 0.99 in group I and ↓4.35 ± 1.79.in group II. According to Chi square this difference (P=<0.001) was statistically significant in favor of patients injected with Corticosteroid. However, after 6 monthsthe mean difference was ↓6.10 ± 1.77 in group I and ↓1.80 ± 1.58 in group II. These results denoted that PRP was statistically superior to CS (P<0.001) in the 6 months post injection period. After 2 weeks, there was statistically significant difference (P<0.001) between group I and group II with more improvement (mean difference of ↓31.3 ± 16.7 in group II and ↓3.59 ± 4.01 in group I) in QuickDASH-9 score in group II (CS). However. After 6 months, there was a statistically significant difference between group I and group II with more improvement (mean difference of ↓33.22 ± 16.98 in group I and ↓15.84 ± 13.31 In group II), in QuickDASH-9 score in group I(PRPR). CS was better than PRP in intermediate term, unlike PRP which was superior to CS on the long term with regards to QuickDASH

DISCUSSION

The two groups were demographically comparable, predominantly middle-aged female housewives, and there was no significant influence of age, sex, occupation, or side affected on outcomes. Both groups started with similar pain levels and showed significant pain improvement, but CS provided faster relief at 2 weeks, while PRP showed markedly superior pain reduction at 6 months. Functional outcomes measured by QuickDASH-9 mirrored this pattern: CS gave greater early functional improvement, whereas PRP produced a larger and more sustained functional gain at 6 months. Complications were minimal overall, but two patients in the CS group developed post-injection flare, whereas no significant adverse effects were observed with PRP. These results suggest that CS injections are more effective in the short term, offering rapid symptom relief, while PRP provides better intermediate-term pain control and functional recovery. The findings are in line with several published studies reporting superior or more durable outcomes with PRP compared to CS in De Quervain's disease and other musculoskeletal conditions. However, some studies have reported no significant difference between PRP and CS in terms of efficacy, although CS tends to be associated with more complications such as fat atrophy and depigmentation. Overall, this study supports PRP as a safe and effective treatment that offers longer-lasting benefits than CS, particularly beyond the early post-injection period.

CONCLUSION

Corticosteroids are more effective than PRP in the short term (2 weeks). PRP is more effective on the intermediate term (6 months). Both modalities are safe, however PRP is relatively safer than CS.

