Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI:10.21474/IJAR01/8571
DOI URL: http://dx.doi.org/10.21474/IJAR01/8571
ISSN NO. 2320-5407

RESEARCH ARTICLE

TREATMENT OF IDIOPATHIC CARPAL TUNNEL SYNDROME: THE EFFICACY OF LOCAL STEROID INJ. VS. LOCALXYLOCAIN INJ. IN TREATMENT OF IDIOPATHIC CARPAL TUNNEL SYNDROME (I. C.T.S.) (A DOUBLE BLINDED STUDY).

Wijdan H.AL-Shami[1] and Sami Salman[2].

1. MB.ch.B.,DR- DMR, Specialist Doctor in Rheumatology and Rehabilitation AL-Yarmouk Teaching Hosp.Baghdad/Iraq.
2. Prof. MRCP(UK) Medicine Prof./College Of Medicine , Univ. Of Baghdad/Iraq.

Manuscript Info

Manuscript History
Received: 14 December 2018
Final Accepted: 16 January 2019
Published: February 2019

Key words:-
Behaviour, determinant, factor, health, seeking.

Abstract

Background: Locale injections (using steroid ±a local anesthetic) for treatment of carpal tunnel syndrome (C.T.S) is widely known & studied as asafe &effective conservative way of treatment. [1,2,3,4,5,6,7,8]Aim of this study is to compare the efficacy of using each alone on treatment results

Pts.&methods:77pts with (I.C.T.S) were subjected to a double blind study putting them into two comparable groups & subjecting them to local e inj.into the carpal tunnel by either steroid or local anesthetic .pts were evaluated subjectively ,

Objectively and electrophysiologicaly pre and one moths post injection .

Results : were in favour of steroid group with significant improvement of most symptoms and signs ($p<0.01$)

All electrophysiological abnormalities improved significantly ($p<0.001$) in steroid group while not in xylocain group (a part from SAP-amp.)

Conclusion :It looks that steroid alone has a superior effect over xylocain alone in treating I.C.T.S by local inj.

Introduction:-

Carpal tunnel syndrome (CTS) (The compression of median nerve in the carpal tunnel , McArdle 1951) can be idiopathic (I.C.T.S)or secondary to many causes [9].

Local steroid inj. was mentioned for first time as a type of conservative treatment by (Phalen and Kindrick 1957)[10] , since then different studies were done to compare conservative vs .surgical decompression of the median nerve [11, 12 ,13] , and to compare local steroid effect vs systemic steroid [14]and vs .other different conservative ways of treatment [10] (splinting [15] ,lontophoresis[16]) .

For local injections steroid± a local anesthetic is used usually and successfully[1-8] .

Corresponding Author:-Wijdan H.AL-Shami.
Address:-MB.ch.B.,DR- DMR, Specialist Doctor in Rheumatology and Rehabilitation AL-Yarmouk Teaching Hosp.Baghdad/Iraq.

Mechanism of action was attribted to anti-inflammatory effect or a mechanical effect (displacing some thing which was compressing the nerve)[1,10]

This is a double blind study to compare the efficacy of using steroid alone vs anesthetic alone in treating pts . which I.C.T.S. by local inj.

Patients and Methods:-

77 patients with I.C.T.S .(presented to rheunatol. consult .clinic / medical city , Baghdad) 64 females and 30 males their mean age was 38± 11.5 years, duration of sympts.≥ 3 moths occupation: house wife 76% teacher 9.2 % clerk 5.5% labourir 5.5 % and farmer 1.9 %. All were evaluated:

1. Clinically by (phalentest ,Tinel's test ,Pin Prick sens ., power of A.P.B and OP.bsides horizontal V.A.S. for severity of symptoms.)
2. Subjected to electrophysiological study (EMG/NCS) of both Ulnar and Median nerves of affected hands .
3. (Note : C.T.S was diagnosed if : median n . showed DML> 4.1 m sec , SAP –L> 3.7 msec , median SAP –amp : Ulnar SAP – amp =< 1)
4. All secondary C .T.S cases (due to inflammatory arthritis, degenerative, traumatic , endocrine causes beside pregnancy and lactation)
1. Were excluded by history , laboratory tests , x- rays of affected hands.
2. Patients were randomly allocated , into two comparable groups (regarding sex ,age, occupation duration and severity of symptoms .
3. Treatment was given in a double blind way as follows :
4. Group A : 0.5 ml (20mg) of triamcinolone Acetonide.
5. Group B : 0.5 ml of 2 % Xylocain .
6. Patients were asked to continue their normal daiely activities and occupations .and to avoid other treatments especially NSAIDs .
7. Re – evaluation was done one month later by the same way .
8. At the end: comprison between the two groups was done by using Chi Square test for sympts and signs Paired t tests for V.A.S .and electro physiological studies .

Results:-

Subjective evaluations

symptomatic

Over all symptomatic improvement	Group A (steroid)	Group B(2% xylocain)
1- Mean % of improvement /PtFeeling .	69 %	46.8%
2- Final results of treatment		
100 % improve .(symptomfree)	18.8%	26.5 %
Mild moderate improve.	76.7%	50%
No improve	4.7 %	23.5 %
3- Mean number of paracetmol tabs needed / 30 days	**11**	**16**

Severity of symptoms

Horizontal V.AS .

	Before R	After R	Significance	
			T value	P value
Group A(steroid)	**6.6**	**2.1**	**11.78**	**P> 0.001**
Group B (2% xylocain)	**7**	**3.9**	**5.9**	**P> 0.001**

Objective (clinicalassements)

Signs	Group A (steroid)		Group B (2%xylocain)		Significance	
	Turn - -- ve	Not changed	Turn - ve	Not changed	X_2	P
+vePhalen test	48%	52 %	43 %	57%	0.17	N.S
+veTinel's test	30.5 %	69.5 %	30.5 %	62.5 %	0.003	N.S
Hypo-algesia	38%	62 %	6.5 %	94 %	0.002	N.S
Hyper- algesia	28.5 %	71.5 %	25 %	75 %	0.12	N.S
(weakness)	34.5 %	65.5 %	32 %	68%	0.033	N.S

Objective : (electrophysiological assements)

EMG / NCV indices	Group A(steroid)				Group B(2 % xylocain)			
DML (msec)	Before Rx	After Rx	T value	P value	Before Rx	After Rx	T value	P value
DML (m sec)	5.3	4.7	5	p< o.oo1	4.5	4.4	0.9	N.s
SAPL (m sec)	4.7	3.9	6.2	p< o.oo1	4.6	4.3	1.8	N.s
SAP – amp (m .v)	6.2	8.4	4.3	p< o.oo1	4.7	3.4	4.1	p< o.oo1
NCV (m / sec)	61.9	65.8	4.2	p< o.oo1	60.1	61.5	0.9	N.S

Discussion:-

1. Electrophysiological study is the most accurate diagnostic measure ,the best way ofassenment of severity of nerve compassion and of results of treatment (Deckers) [17,18] .
2. We re-valuated our patients one month post treatments because this is the minimal period needed for expecting changes in electrophysiological indicines[2,19,20,21] .
3. A Certain % of C . T.S cases are self –limitting(complete remission)due to resting of affected hand or changing accupation[10 , 23] ,therefore we instructed our patients to continue their usual jobs and A.D.L .Assessments of our results showed :
4. In the subjective feelings of pts :
5. Steroid group did slightly better thanxylocain group (with a significant difference in both groups) in most of the presenting symptoms .
6. Electrophysiologicaly : steroid was more effective in improving all parameter (but no . pt returned to normal in all parameters simultaneously) .
7. DML and SPA –L returned to normal in only some patients (more in steroid group)
8. Spontaneous activity/ thenarms. – disappeared in the both groups (cured)

Conclusion:-

Its looks that steroid alone has a superior effect overxylocain alone and this may be due to both anti – inflammatory and mechanical effect of steroid vs only mechanical
(volume) effect of xylocain

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