

## Effect of cyriax inferior capsule stretching in idiopathic adhesive capsulitis

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**Objective:** To find effect of cyriax inferior capsule stretching in idiopathic adhesive capsulitis

**Methods:** This RCT was conducted from February to July 2018 at Railway General Hospital, Rawalpindi, Pakistan and included 28 adhesive capsulitis patients equally divided into control and experimental groups. Patients of 30-70 years with Adhesive capsulitis of stage 1&2 were included in the study and those with intrinsic etiology and with stage 3 adhesive capsulitis were excluded. Pre and post intervention examination was done using goniometer for ROM, VAS for measuring intensity of pain in shoulder joint and SPADI was used to measure disability associated with joint. Patient in control group were treated

with mobilization and those in experimental group with mobilization with inferior capsular stretch. Data analysis was done using SPSS version 21.

**Results:** Out of 28 participants, 8 were males and 20 females. Mean age was 53.1 years. Mean value for patient with right sided affected shoulder was 67.9% and for left sided affected shoulder was 32.1%.

**Conclusion:** Shoulder mobilization with inferior capsular stretch was found to be effective in reducing pain and increasing shoulder abduction. (Rawal Med J 202;46:331-333).

**Keywords:** Adhesive capsulitis, shoulder pain and disability index, frozen shoulder.

### INTRODUCTION

Adhesive capsulitis (AC) also known as frozen shoulder is a condition of an undefined aetiology in which there is considerable limitation in active and passive movements of shoulder. It is commonly seen in women and usually effects in fourth or fifth decade.<sup>1</sup> Major problem is pain and limited ROM in shoulder joint reducing quality of life. The frozen shoulder is prevalent in general population for about 2% to 5% and 10% to 15% in the diabetic population.<sup>2</sup> In Pakistan, reported prevalence rate is 2.5%.<sup>3</sup>

The patient may present with progressive pain and stiffness while doing overhead activity or doing activities such as moving away and behind back.<sup>4</sup> Loss of motion is rarely functionally restraining.<sup>5</sup> Adhesive capsulitis has progressive pattern categorized into three phases; painful, freezing and recovery or thawing phase. Primary AC is idiopathic form and secondary AC can develop after any prevalent pathology.<sup>6</sup> For evaluation, MRI has been used.<sup>7</sup> Shoulder test include neer's, hawking's, horizontal adduction test, painful arc test, drop arm

test, yergason test and speed test.<sup>8</sup> Fasting glucose may be done to rule out diabetes.<sup>9</sup>

Nonsteroidal inflammatory drugs and oral corticosteroids, intra articular injections and acupuncture have been used.<sup>10</sup> Surgical interventions include procedures such as arthroscopic capsular release, manipulation under anesthesia. Physiotherapy involves ROM exercises and stretches exercises, manual therapy, strengthening exercises and heat therapy.<sup>11</sup> The aim of this study was to determine the effects of inferior capsular stretching technique along with manual mobilization for improving shoulder joint ROM, pain reduction and for improving quality of life in patients with AC.

### METHODOLOGY

This Randomized control trial was conducted from February to July 2018 at Rehabilitation unit of Railway General Hospital, Pakistan (RCT No. NCT04157387). Study included 28 pre diagnosed AC patients selected through purposive sampling,

which were further equally divided into two groups, control and experimental groups. Inclusion criteria included patients of 30-70 years with AC of stage 1 and 2. Patients with any intrinsic aetiology such as haemarthrosis and patients with stage 3 AC were excluded from study.

Pre and post intervention examination was done using different tools such as goniometer for ROM, VAS for measuring intensity of pain in shoulder joint and SPADI was used to measure disability associated with shoulder joint. Treatment included total 8 sessions, given three times a week for fifteen to twenty minutes. Patient in control group were treated with mobilization and those in experimental group were treated with mobilization with inferior

capsular stretch.

**Statistical Analysis:** Data analysis were done using SPSS version 21. Significant changes were calculated by using paired simple T test. Three tools were compared by applying independent sample T test.  $p < 0.05$  was considered significant.

## RESULTS

Out of 28 participants, 8 were males and 20 females, with 14 in each group. Mean age of patients in control was 53 and in experimental group 53.5. Mean value for patient with right sided affected shoulder was found to be 67.9% and mean value for left sided affected shoulder was found to be 32.1% (Tables 1 and 2).

**Table 1. Pre and post values of ROM in two groups.**

Variable	Group	Pre interventional values		Post interventional values		Pre and post difference in values		p
		Mean	SD	Mean	SD	Mean	SD	
Ext. rotation	Control group	35.82	6.37	65.21	9.84	50.08	3.01	0.001
	Experimental group	35.64	7.12	68.0	11.18	33.36	4.0	0.001
Abduction	control group	59.75	18.15	92.35	8.36	33.5	9.79	0.001
	Experimental group	62.82	18.59	98.9	5.16	37.0	13.43	0.001
Int. rotation	Control group	47.21	5.8	63.71	7.04	18.5	1.24	0.001
	Experimental group	43.35	9.03	67.14	3.37	28.79	5.66	0.001

**Table 2. Pre and post values of pain and disability.**

Variable	Group	Pre interventional Values		Post interventional Values		Pre & post Value difference		p
		Mean	SD	Mean	SD	Mean	SD	
VAS	Control Group	7.86	1.34	3.6	0.143	4.15	0.	0.001
	Experimental Group	6.95	2.27	2.8	1.99	4.31	1.09	0.001
SPADI	Control Group	65.67	14.82	31.28	9.38	35.36	6.44	0.001
	Experimental Group	51.85	14.01	34.64	13.80	16.30	0.21	0.001
SPADI (disability)	Control Group	61.40	17.70	27.75	11.78	35.78	7.8	0.001
	Experimental Group	65.63	11.76	36.0	13.9	33.0	4.0	0.001
SPADI (Total)	Control Group	66.35	13.53	25.59	8.90	41.98	5.9	0.001
	Experimental Group	66.57	6.13	32.95	11.03	32.67	5.9	0.001

## DISCUSSION

We found significant difference in pre & post interventional values on VAS, SPADI and ROM ( $p < 0.05$ ). So, inferior capsular stretching with mobilization was an effective treatment technique in reducing pain and improving ROM if shoulder

abduction. A study by Paul et al showed that manual therapy with capsular stretch was more effective than manual therapy alone.<sup>2</sup> Our results are similar. A RCT carried out by Chauhan et al in 2011 found that physiotherapy treatment helped in increasing shoulder ROM's in patients with idiopathic frozen

shoulder and also helped in reducing pain.<sup>12</sup> The results of our study also showed that shoulder ranges improved and pain decreased with treatment. A Meta-analysis done by Marinko et al included RCTs on AC and then comparison was done among various therapeutic exercises and additional approaches of treatment in terms of managing pain, increasing ROM and joint function. The findings showed improvement with therapeutic exercises.<sup>8</sup> Nicholson showed ROM exercises helped in improving shoulder ranges however, shoulder joint ranges improved more through active exercises and active exercises were found to be more effective.<sup>13</sup> This study also showed that physiotherapy treatment increased overall ROM's of shoulder joint and helped in reducing pain.

## CONCLUSION

Shoulder mobilization with inferior capsular stretch was found to be effective in reducing pain and increasing shoulder abduction ROM in patients with AC.

### Author contribution

Conception and design: Abdul Ghafoor Sajjad, Ramsha Tariq  
Collection and assembly of data: Ramsha Tariq  
Analysis and interpretation of the data: Abdul Ghafoor Sajjad  
Drafting of the article: Ramsha Tariq  
Critical revision of the article for important intellectual content: Sara Yasin, Ramsha Tariq  
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