통증 및 근골격재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

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Blind intra-articular injection with low- and high-dose corticosteroid in frozen shoulder

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Background

A recent study found no difference of efficacy of ultrasound-guided intra-articular injection according to 2 different doses (high dose as 40mg of triamcinolone vs low as 20mg) in frozen shoulder (FS). However, the study did not reflect the reality, as most primary clinicians use blind intra-articular injection without the use of ultrasound.

Objective

To determine whether blind intra-articular injection with a high-dose corticosteroid improves pain and function in patients with FS better than a low dose.

Methods : Participants (N=64) with primary FS were randomly assigned to receive blind intra-articular injections with 40mg triamcinolone acetonide (high-dose group, N=32) or 20mg triamcinolone acetonide (low-dose group, N=32). Inclusion criteria were (1) age, 20 to 70 years old, (2) stage 2 (frozen stage) of FS at least 1 month of pain duration: pain and stiffness in predominantly one shoulder for ≥1 month; restriction of passive motion of greater than 30° in two or more planes of movement, measured to onset of pain with a long-arm goniometer, and (3) average pain intensity during a day defined as a score of 5 points or more on a 10-cm visual analog scale (VAS) rated from 0 (no pain) to 10 (worst imaginable pain). Exclusion criteria were (1) secondary FS, (2) definite rotator cuff lesion; complete or full-thickness tear of the rotator cuff, (3) previous corticosteroid injection at the affected shoulder within 1 month, (4) high-risk bleeding tendency, (5) uncontrolled serum glucose level in diabetes patient (>180mg/dl), or (6) previous history of shoulder surgery. The outcome measures include visual analog scale (VAS) for average shoulder pain level, Shoulder Pain and Disability Index (SPADI), and passive range of motion including flexion, abduction, extension, external rotation, and internal rotation before treatment and weeks 3 and 6 after treatment.

Results

There are no statistical differences between the 2 groups in baseline characteristics. Repeated-measure analysis of variance shows no significant difference between the 2 groups (P>.05).

Conclusions

We assessed the efficacy of corticosteroid injections according to 2 different doses that are mostly widely used in blind intra-articular injections for FS. This study shows that there were no significant differences between the low- and high-dose corticosteroid groups, indicating the preferred use of a low dose in the initial stage.

Table 1. Baseline characteristics of patients

	Low-Dose Group (n=32)	High-Dose Group (n=32)	*P* value*
Age, yr	56.8±7.9	56.8±9.4	.966
VAS score	5.2±2.1	4.7±1.7	.301
SPADI	63.5±22.5	60.5±22.8	.589
Duration of shoulder pain, mo	5.1±3.1	5.5±3.3	.611
Flexion, deg	130.6±23.3	124.6±22.5	*.299*
Abduction, deg	89.5±22.3	86.8±21.6	.618
Extension, deg	40.8±15.8	42.9±20.6	.650
Internal rotation, deg	40.9±10.5	40.5±10.4	.889
External rotation, deg	43.6±24.4	40.7±22.4	.621
Body mass index, kg/m^2	23.9±3.2	24.0±3.7	.922

Values are expressed as mean ± standard deviation.
VAS = visual analogue scale; SPADI = Shoulder Pain and Disability Index.
* T test for between-group comparison.

Table 2. Changes of outcome measurements After Intra-articular Injections

	Low-Dose Group (n=32)	High-Dose Group (n=32)	*P*, group-by-time interaction*
VAS score			.306
Week 0	5.2±2.1	4.7±1.7	
Week 3	3.0±2.3	2.3±1.4	
Week 6	2.1±1.8	2.1±1.8	
SPADI score			.292
Week 0	63.5±22.5	60.4±22.8	
Week 3	42.2±27.1	31.0±20.8	
Week 6	28.8±21.0	27.3±26.3	
Flexion, deg			.221
Week 0	130.6±23.3	124.6±22.5	
Week 3	145.9±22.6	140.3±21.1	
Week 6	151.7±18.2	146.1±16.6	
Abduction, deg			.940
Week 0	89.5±22.3	86.8±21.6	
Week 3	106.9±23.0	106.8±21.1	
Week 6	111.7±26.4	113.4±30.8	
Extension, deg			.748
Week 0	40.8±15.8	42.9±20.6	
Week 3	51.0±17.5	50.9±16.4	
Week 6	52.6±19.9	54.3±16.3	
Internal rotation, deg			.318
Week 0	40.9±10.5	40.5±10.4	
Week 3	35.0±11.2	33.2±9.8	
Week 6	32.6±10.2	30.7±8.8	
External rotation, deg			.082
Week 0	43.6±24.4	40.7±22.4	
Week 3	52.6±25.1	52.7±21.6	
Week 6	57.1±26.1	55.2±22.6	

Values are expressed as mean ± standard deviation.
VAS = visual analogue scale; SPADI = Shoulder Pain and Disability Index
* Repeated-measures ANOVA for group-by-time interaction ($P<.05$).