

COMBINATION EFFECT OF *PATRAPINDA SWEDA* (HOT FOMENTATION) AND MASSOTHERAPY ON *APABAHUKA* (FROZEN SHOULDER)

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Introduction

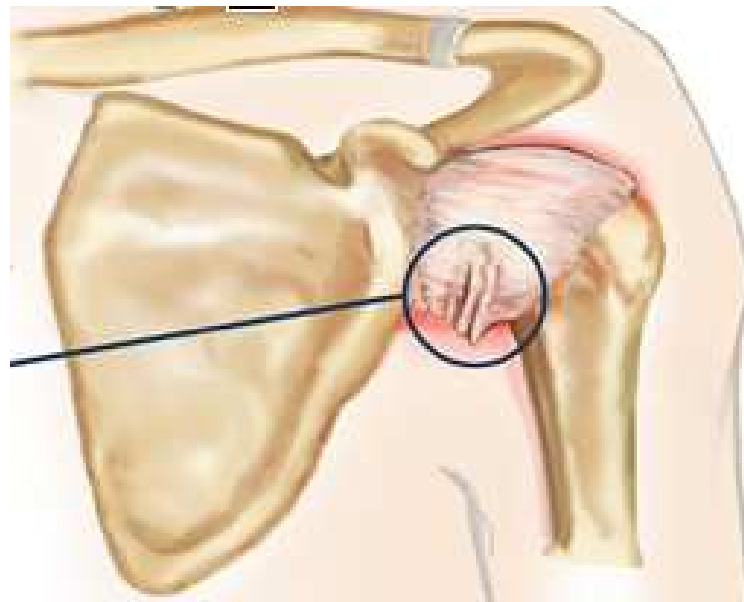
- Frozen shoulder is the lay term for the condition known in health care as adhesive capsulitis
- The term adhesive capsulitis implies that the shoulder joint capsule has adhesions and inflammation that limits the motion of the shoulder (William *et al*, 2009)

Introduction

Frozen shoulder has its opponents, for the shoulder during the disease is neither cold nor icy. The term “frozen” refers more to the rigidity and stiffness (Bunker, 2009)

Introduction

**Adhesions
between the
surfaces of the
joint capsule**



Introduction

- Frozen shoulder is thought to have an incidence of 3-5% in the general population
- Its peak incidence is between the ages of 40 and 60 and is rare outside these age groups and in manual workers and is slightly more common in women
- Diabetes is the most common associated disease with frozen shoulder and a patient (Uppal *et al*, 2015).

Introduction

- According to *Desana* system of medicine, frozen shoulder can be caused by *Ushna Tejo* as well as *Sīta Tejo*. *Le-Ka-Roga* is due to influence of functional properties of *Vayo Mahabhuta*.

Introduction

- In *Ushna Tejo* cases, frozen shoulder is included in the disease pattern of *Ketkhala* and 2nd *Vihtasmbhita* among eight patterns of diseases
- *Ketkhala* pattern is due to excessive internal *Pathavi* and external *Pathavi* whereas 2nd *Vihtasmbhita* is due to diminished internal *Pathavi* and excessive external *Pathavi*

Introduction

- In *Sitta Tejo* cases, *Le-Ka-Roga* is included in the pattern of *Sangahita* and 2nd *Bhyuhana*. *Sangahita* is due to excessive internal *Pathavi* and external *Pathavi* whereas 2nd *Bhyuhana* is due to diminished internal *Pathavi* and excessive external *Pathavi*
- There will be more severe type in excessive internal and external *Pathavi* such as *Ketkhala* and *Sangahita*. These signs and symptoms are excessive by *Bahiddha Aban Dana* and it can be relieved by functional property of *Akasha* (Win-Myint, 2016)

Introduction

- Traditional medicine described that the person suffers from excruciated shoulder pain occasionally and limits range of movement of shoulder joint. This condition is called *Le-Ka-Roga* (Kyaw-Naing, 1996)

Introduction

- In *Ayurveda*, the symptoms, etiopathogenesis resembles with *Apabahuka*. It is a disease characterized by morbid *Vata Dosha* localizing around the shoulder joint and thereby causing loss or dryness of *Shleshaka Kapha* as well as constricts the *Siras* at this site leads to loss of movements of the arm (Swapnil, 2015)

Introduction

- In Traditional Medicine Teaching Hospitals, Yangon and Mandalay, there are many treatment procedures such as massotherapy, external applications, hot fomentation, acupuncture therapy and medication in the management of frozen shoulder

Introduction

- According to the Ayurvedic classic, *Patrapinda Sweda* is a specialized therapy which is performed for the diseases related to bones, muscles and nerves
- Thus, frozen shoulder patient was treated with *Patrapinda Sweda* in this study.

Introduction

- In present study, *Patrapinda Sweda* is made up of leaf of *Vitex negundo* L. (*Kyaung-pan*), *Croton oblongifolia* N.P Balakr. (*Thet-yinn-gyi*) and *Datura stramonium* L. (*Pa-dine*) and rhizome of *Zingiber barbatum* Roxb. (*Make-thet-linn*) and *Zingiber officinale* (*Chinn*)
- These ingredients have analgesic and anti-inflammatory activities and pacify *vata Dosha*

Introduction

- Myanmar Massotherapy was also used for the treatment of *Apabahuka* and promote circulation, muscle relaxation and pain relief

Introduction

- Although, combination of *Patrapinda Sweda* (Hot Fomentation) and Massotherapy is clinically effective in treatment of frozen shoulder, there is no scientific evidence about its effectiveness in Myanmar
- Therefore, this study intended to find combination effect of *Patrapinda Sweda* (Hot Fomentation) and Massotherapy on frozen shoulder patient

Objectives

- (1) To describe the clinical features of frozen shoulder before treatment (day 0)
- (2) To assess the clinical features of frozen shoulder patients during treatment (day 8, day 16 and day 24)
- (3) To determine the serial improvement of the combination of *Patrapinda Sweda* and Myanmar Massotherapy on day 0 with day 8, day 16 and day 24

Materials and Methods

Study Design

- Hospital based quasi experimental study

Study Site

- 100 bedded TMTH, Mandalay

Materials and Methods

Study Period

- One year (from 1st August 2016 to 31st July 2017)

Study Population

- IPD and OPD 40 frozen shoulder patients at 100 bedded TMTH, Mandalay

Inclusion criteria

- (1) Both genders
- (2) Age of the patients was above the age of 21 years and below the age of 70 years
- (3) Patients presenting clinical features of frozen shoulder for less than nine months duration

Exclusion Criteria

- Severe hypertension (Systolic blood pressure ≥ 180 / diastolic blood pressure ≥ 109 mmHg)
- History of previous surgery on affected shoulder joint
- Dislocation and open fracture on affected shoulder joint
- Frozen shoulder with diabetes mellitus, hemiplegia and thyroid disease
- Radiographic pathological findings or glenohumeral osteoarthritis on X- ray

Exclusion Criteria

- Clinical evidence of significant cervical spine disease
- History of significant trauma to the shoulder
- Local corticosteroid injection or any physiotherapy intervention to the affected shoulder within the last three months
- Bilateral frozen shoulder due to possible underlying systemic cause (Carette *et al*, 2003)

Criteria for assessment

- (1) Pain
- (2) Inflammation
- (3) Tenderness
- (4) Abduction
- (5) Flexion
- (6) External Rotation
- (7) Internal Rotation

Criteria for assessment

Pain severity was evaluated using 1 to 5 pain score

Table 1- Pain Score

Pain	Score
No pain on dressing , undressing, or sleeping	1
Tolerable aches and pain when dressing or undressing not severe enough to disturb sleeping on the affected shoulder	2
Intolerable pain when dressing or undressing but not severe enough to disturb sleeping on the affected side	3
Intolerable pain when dressing or undressing severe enough to disturb sleeping on the affected side	4
Intolerable pain day or night aggravated by arm movement, unable to sleep, irritable and depressed.	5

Criteria for assessment

- Inflammation and Tenderness was evaluated present and absent
- Goniometer were used for assessment in shoulder joint movements

Criteria for assessment

Table 2- Assessment Criteria

Signs and Symptoms	Score 1	Score 2	Score 3	Score 4
Abduction	No limitation	(81° - 180°)	(46° - 80°)	(10° - 45°)
Flexion	No limitation	(81° - 180°)	(46° - 80°)	(10° - 45°)
External rotation	No limitation	(61° - 90°)	(31° - 60°)	(10° - 30°)
Internal rotation	No limitation	(61° - 90°)	(31° - 60°)	(10° - 30°)

Table 3. Assessment Chart

SI. No	Signs and Symptoms	Score for Assessment			
		Day 0	Day 8	Day16	Day 24
1	Pain				
2	Inflammation				
3	Tenderness				
4	Abduction				
5	Flexion				
6	External Rotation				
7	Internal Rotation				

Figure 1. Measurement of ROM of Shoulder Joint with Goniometer



Materials

- For *Patrapinda* – Leave pack, Hot Plate, Rounded bottom vessel
- Oil for *Abhyanga*– Medicated oil of the five herbal leaves
- For massage – Massage table, Knee high chair
- For assessment – Goniometer
- For diagnosis – X-ray if necessary, Glucometer
- For oral medication– Placebo 2gm

Figure 2. Ingredients for *Patrapinda* and medicated oil



Croton oblongifolia leaves



Datura stramonium leaves



Vitex negundo leaves



Zingiber barbatum rhizome



Zingiber officinale rhizome

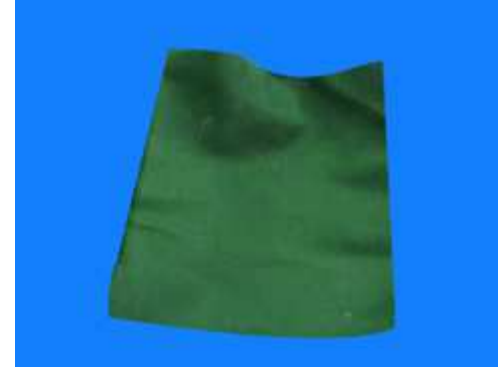
Preparation of Leaves Pack

- The herbal leaves and rhizomes (500grams) are chopped into small pieces and then are taken in a vessel of round bottom. About 200 ml of oil is added to this
- With continuous stirring the leaves are then fried to make it plaint. This fried leaves is used for the preparation of packs. The twelve inches square cotton cloth is on the working table

Preparation of Leaves Pack

- About 250 grams of fried leaves are placed on the cloth. The free corners of the cloth are approximated to cover the leaves
- The free ends of the cloths are folded in its middle. And then is tied with a cotton thread to make a rounded pack with handle
- In this way two packs are prepared

Figure 3. Preparation of Leaves Pack



Preparation of medicated oil

- Three liters of sesame oil, one liter of water and 800 grams of herbal leaves are needed for preparation of medicated oil. 800 grams of herbal leaves are boiling with one liter of water
- Drying up 800 grams of herbal leaves is added to three liters of sesame oil. And then water is evaporated by heating. After the water is evaporated, medicated oil is obtained. Medicated oil was prepared by using moderate method in this study.

Figure 4. Preparation of medicated oil



Treatment Procedure

- The subjects were selected according to inclusion criteria
- Patients' consent was taken by using consent form
- A complete history was taken and thorough physical examinations were performed according to pro-forma

Treatment Procedure

- Radiological X- ray was carried out if necessary as well as for exclusion
- All patients who fulfill the inclusion criteria were taken an oral administration of placebo tablet form (2gm) with warm water after meal for two times in a day during study period. The placebo tablet form was made by using fired rice powder

Treatment Procedure

- Then, the patients were treated by combination of *Patrapinda Sweda* (Hot Fomentation) and Myanmar Massotherapy
- The patients were initially treated with *Patrapinda Sweda* (Hot Fomentation with heated herbal pack) for 20 minutes
- And then the patients were finally treated with Myanmar Massotherapy with selected pressure points for 20 minutes

Treatment Procedure

- The total duration of the treatment was taken 24 days. The treatment was given for seven consecutive days and every 8th day was being free from any treatment
- The assessment of signs and symptoms were done on day 0, day 8, day 16 and day 24

Patients with *Apabahuka* (Frozen Shoulder) in TMTH (Mandalay)



Exclusion Criteria

Meet inclusion criteria and gave consent form



Shoulder joint x-ray if necessary

Identification of demographic characteristics By pro-forma

Analysis of score on day 0

Analysis of score on day 8

Analysis of score on day 16

Analysis of score on day 24



Compared

Detailed Procedure of *Patrapinda Sweda*

- Heating the Leaves Packs
- Preparation of the Patient
- Position of the Patient
- Application of Oil (*Abayanga*) and Massage
- Methods of *Patrapinda Sweda* (Six methods of *Patrapinda Sweda*)
- Precautions

Detailed Procedure of *Patrapinda Sweda*

- Six methods of *Patrapinda Sweda* (touching with the leaves pack, momentarily touching with the leaves pack, pressing with the leaves pack, rubbing with the leaves pack, linear method with the leaves pack and circular method with the leaves pack) was used in this study

Detailed Procedure of *Patrapinda Sweda*

- Joint area was used especially circular method with the leaves pack and muscle area was used especially pressing with the leaves pack. In the present study, time duration for *Patrapinda Sweda* was used in 20 minutes and heat degree for *Patrapinda Sweda* was used at 40°C

Detailed Procedure of *Patrapinda Sweda*

- There is risk of causing burns during the procedure, therefore every care should be taken to prevent over heat. The therapist should confirm the temperature in the leave pack by touching the same to patient's body at every step
- Patient is asked to take rest for few minutes, and the part treated with *patrapinda sweda* is washed with warm water
- Myanmar massotherapy was instantaneous taken after the *Patrapinda Sweda* therapy

Figure 5 .Performing *Patrapinda Sweda* Therapy



Detailed Procedure of Myanmar Massotherapy

To provide therapeutic effect of Massotherapy for frozen shoulder patients, the following steps were done :

- Selection of pressure point
- Types of pressure, pressure intensity and method of manipulation
- Duration of pressure application

Selection of pressure points

The following are the major pressure points from upper limb and neck region:

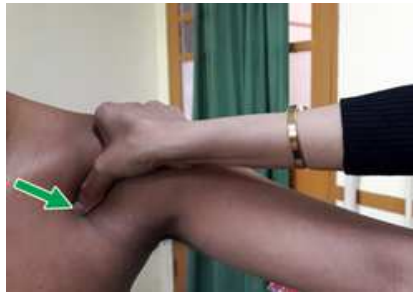
မောင်းဆစ်ကြော	-	UL-3
မောင်းတွင်းကျဉ်ဖူကြော	-	UL-8
မောင်းပြင်ကျဉ်ဖူကြော	-	UL- 9
လက်ဖျံလက်ခလယ်လက်ခါကြောစု	-	UL-10
လက်ဖျံလက်ကုပ်ကြောစု	-	UL-11
ရင်ဆင်းညှပ်ရင်းကြော	-	HN-22

Selection of pressure points

The following are the complementary pressure points from upper limb:

မောင်းတွင်းကြော	-	UL-1
မောင်းပြင်ကြော	-	UL-2
မောင်းအုံကြော	-	UL-4
ဂျိုင်းရင်းညှပ်ကြော	-	UL-5
ဂျိုင်းတွင်းလက်ခါကြောစု	-	UL-6
မောင်းတွင်းနံဆက်ကြော	-	UL-7
လက်မခွကြားကြော	-	UL-12

Figure 6. Selection of pressure points



UL-1



UL-2



UL-3



UL-4



UL-5



UL-6



UL-7



UL-8



UL-9



UL-10



UL-11



UL-12



UL-13

Types of Pressure, pressure Intensity and method of manipulation

- In this study, thumb pressure was used in all points and UL-7 was especially used with opposed thumb and index finger
- In present study, medium pressure was applied in all points
- In present study, pressing manipulation was applied in all points and UL-7 was especially used by grasping manipulation

Duration of pressure application

- In this study, pressure application on each point lasts for five seconds and the pressure is repeated for five times
- Depending on the patient's body build, nature of disease and selected pressure points, duration of massotherapy session usually varies from 20 to 30 minutes
- In present study, duration of pressure application will be used at least for 20 minutes

Data Collection and Data Analysis

- The effectiveness was analyzed by Paired t -Test and General Linear Model method by using SPSS software (version 21)
- A significant level of p value was 0.000 in this study

Finding

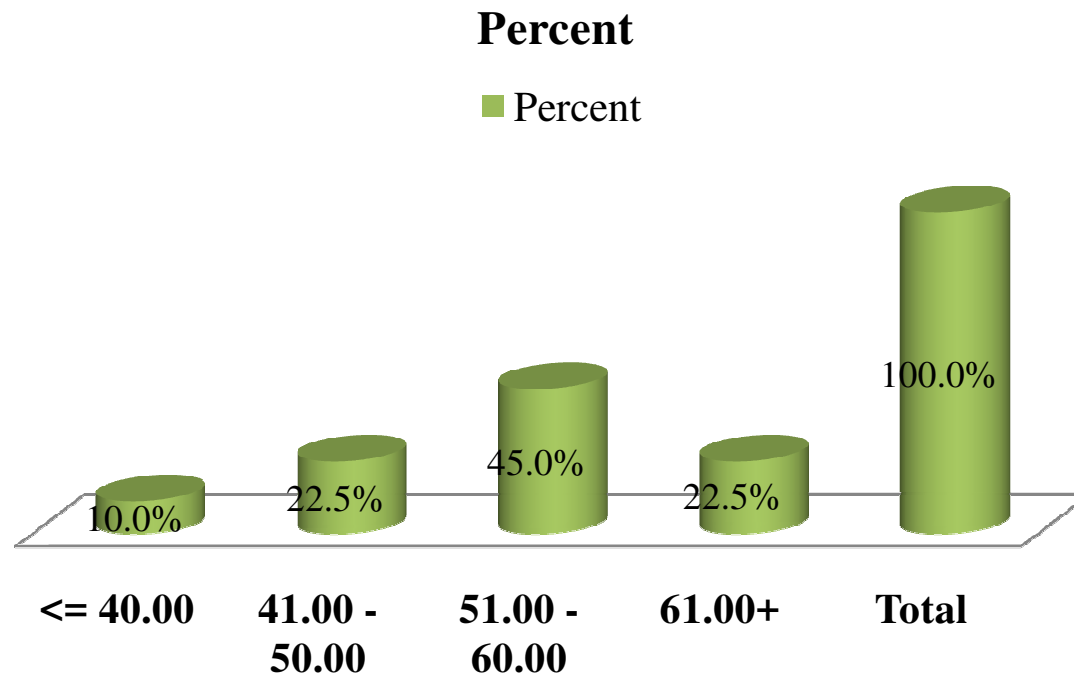


Figure 7. Distribution of Frozen Shoulder patients by Age

Figure 8. Distribution of Frozen Shoulder patients by sex

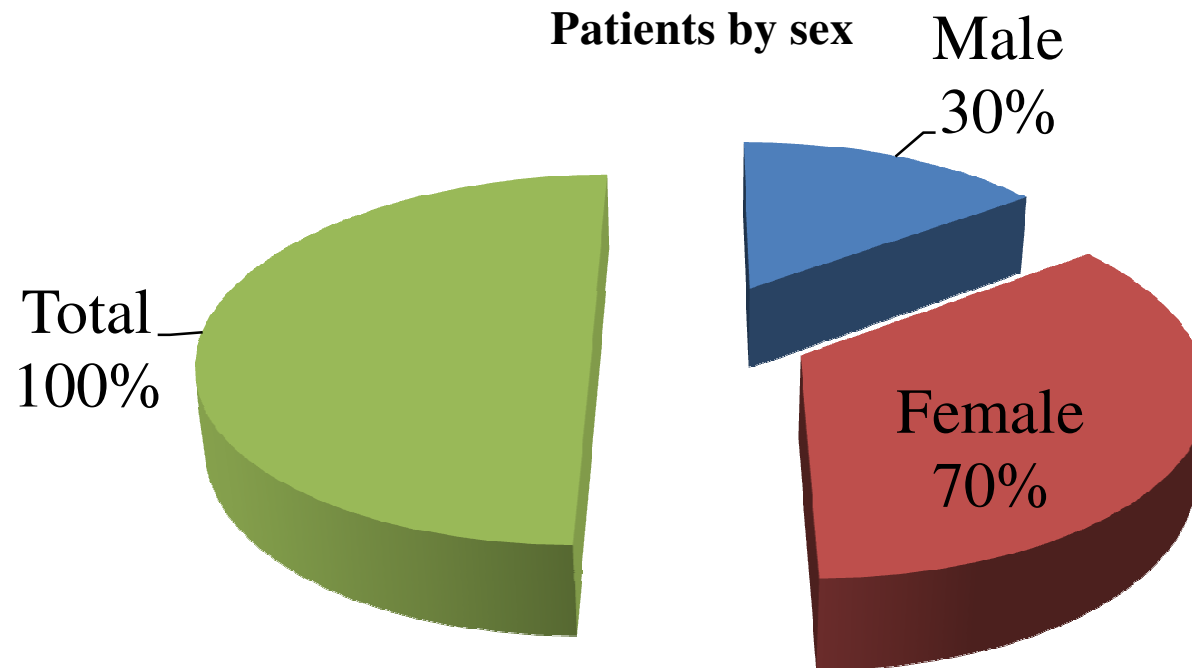


Figure 9. Distribution of Frozen Shoulder patients by duration

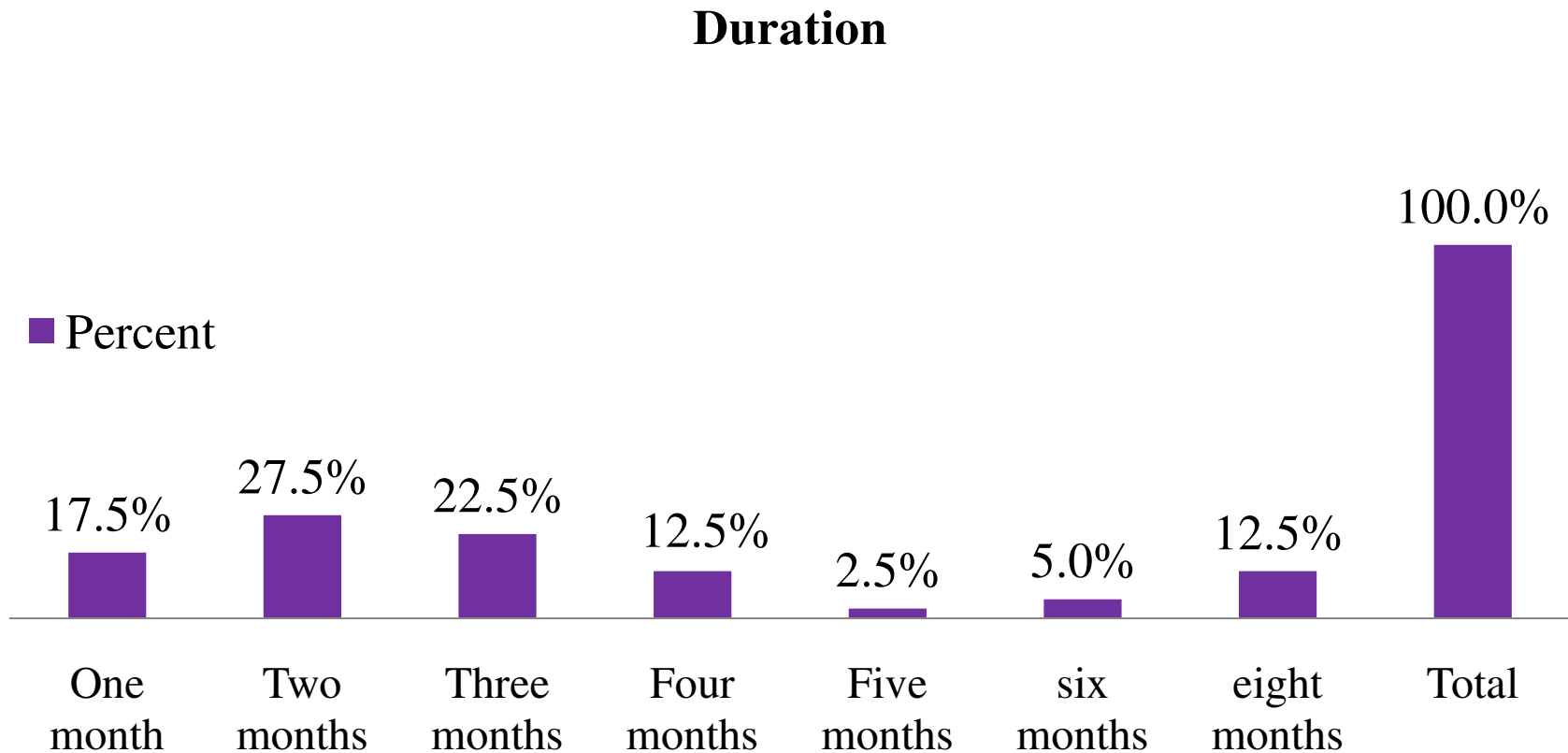


Figure 10. Distribution of frozen shoulder patients by mode of onset

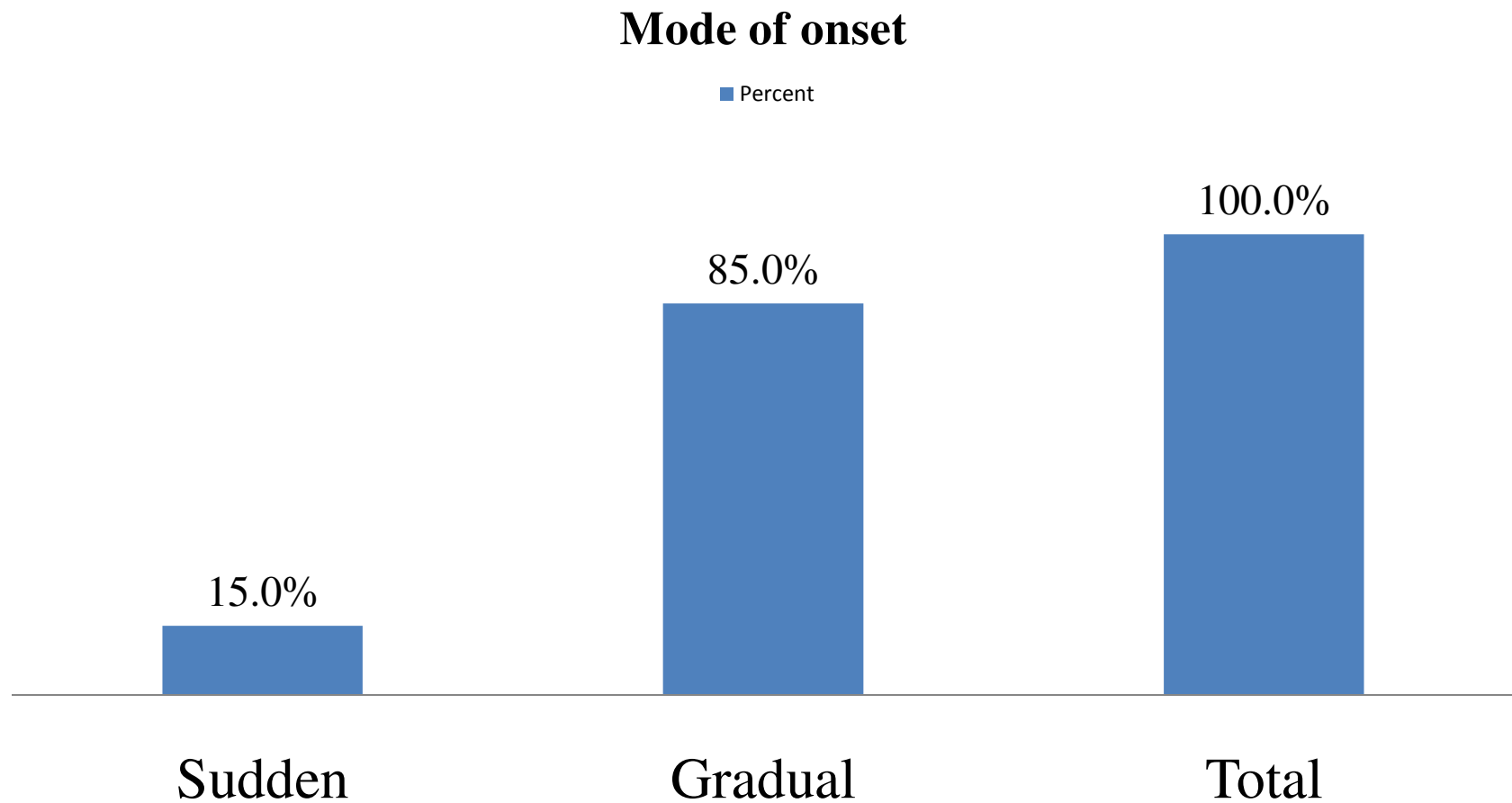


Figure 11. Incidences of clinical presentations in frozen shoulder patients before treatment (day 0)

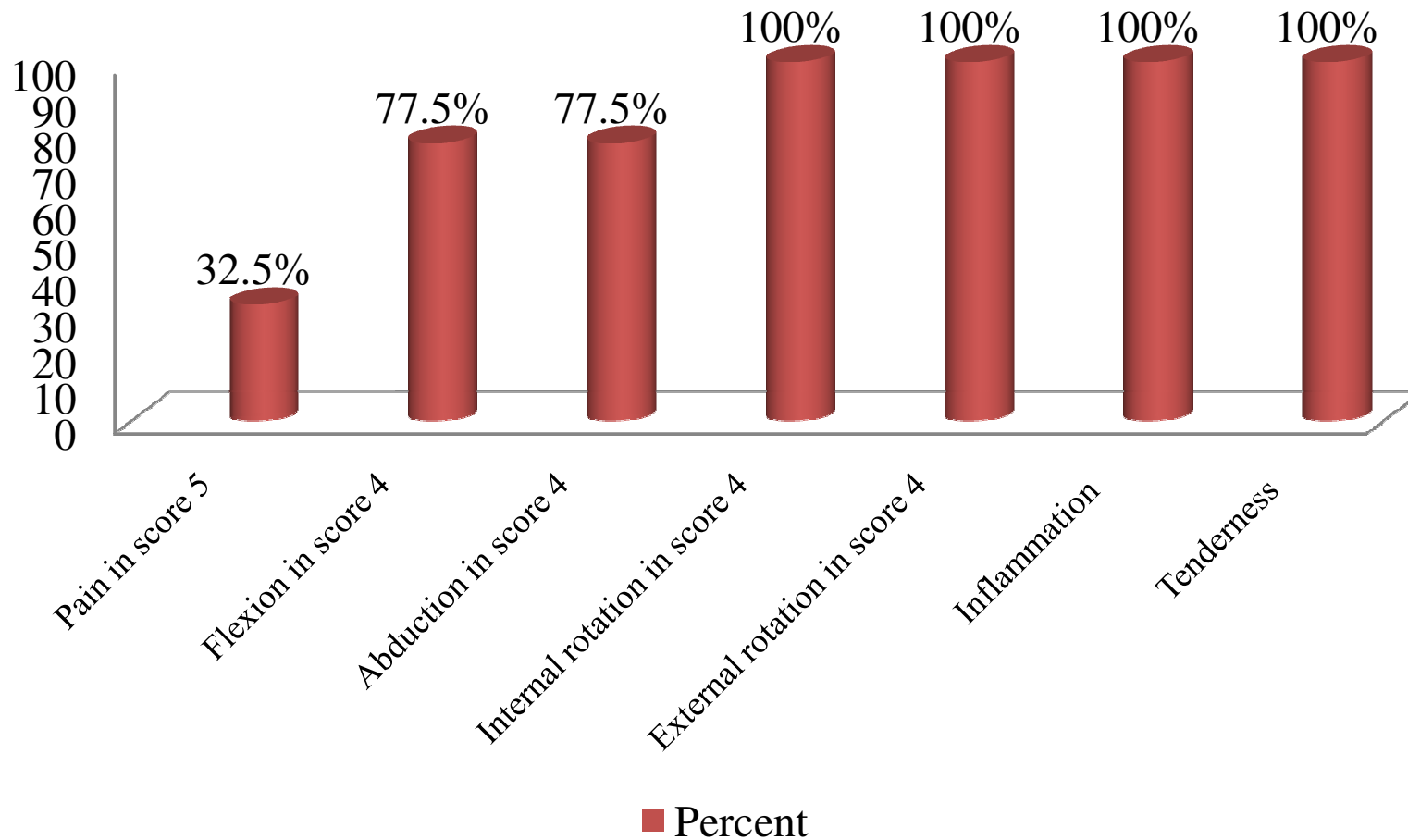


Figure 12. Pain Mean Score on day 0, day 8, day 16 and day 24

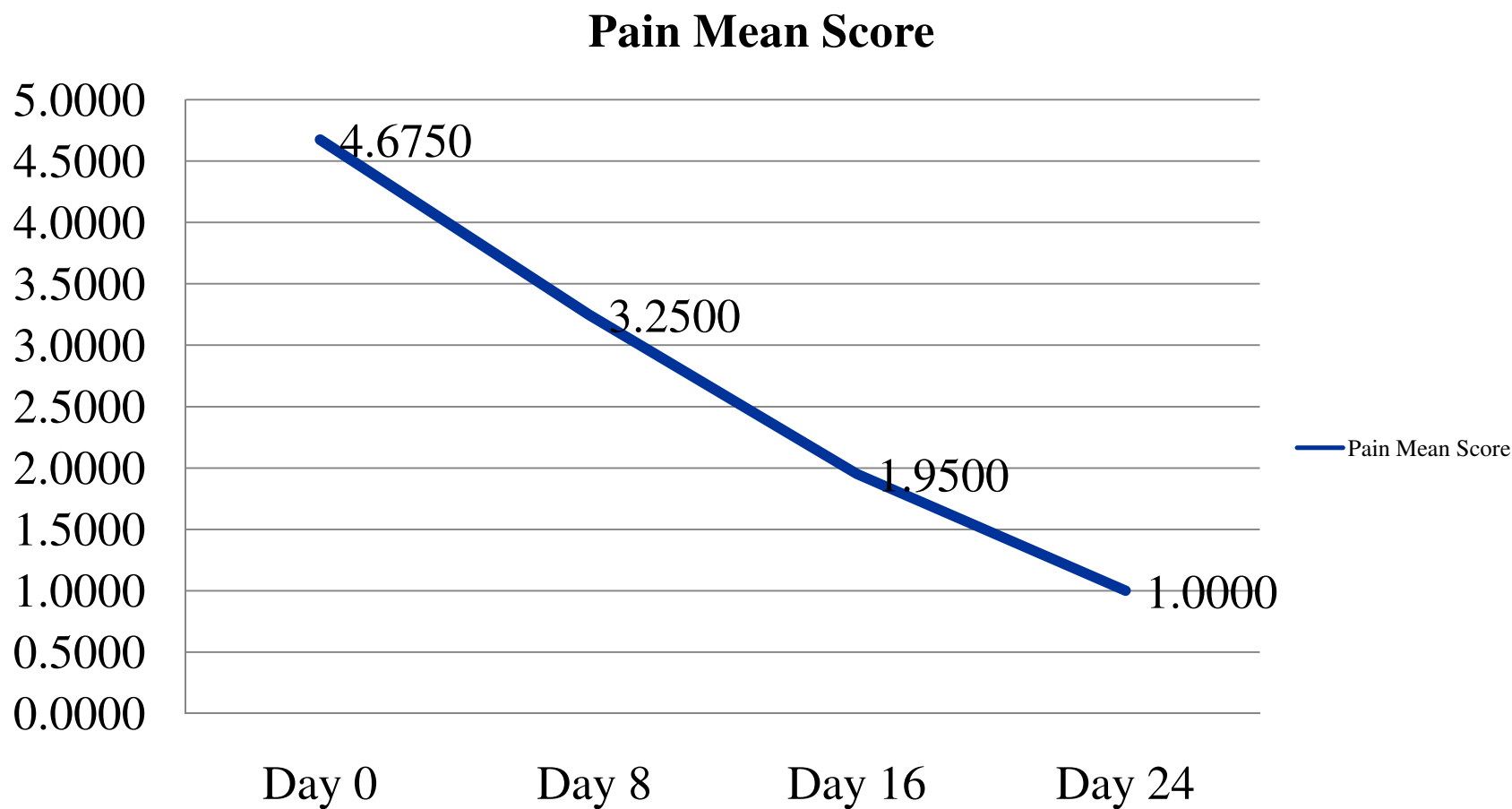


Figure 13. Abduction Mean Score on day 0, day 8, day 16 and day 24

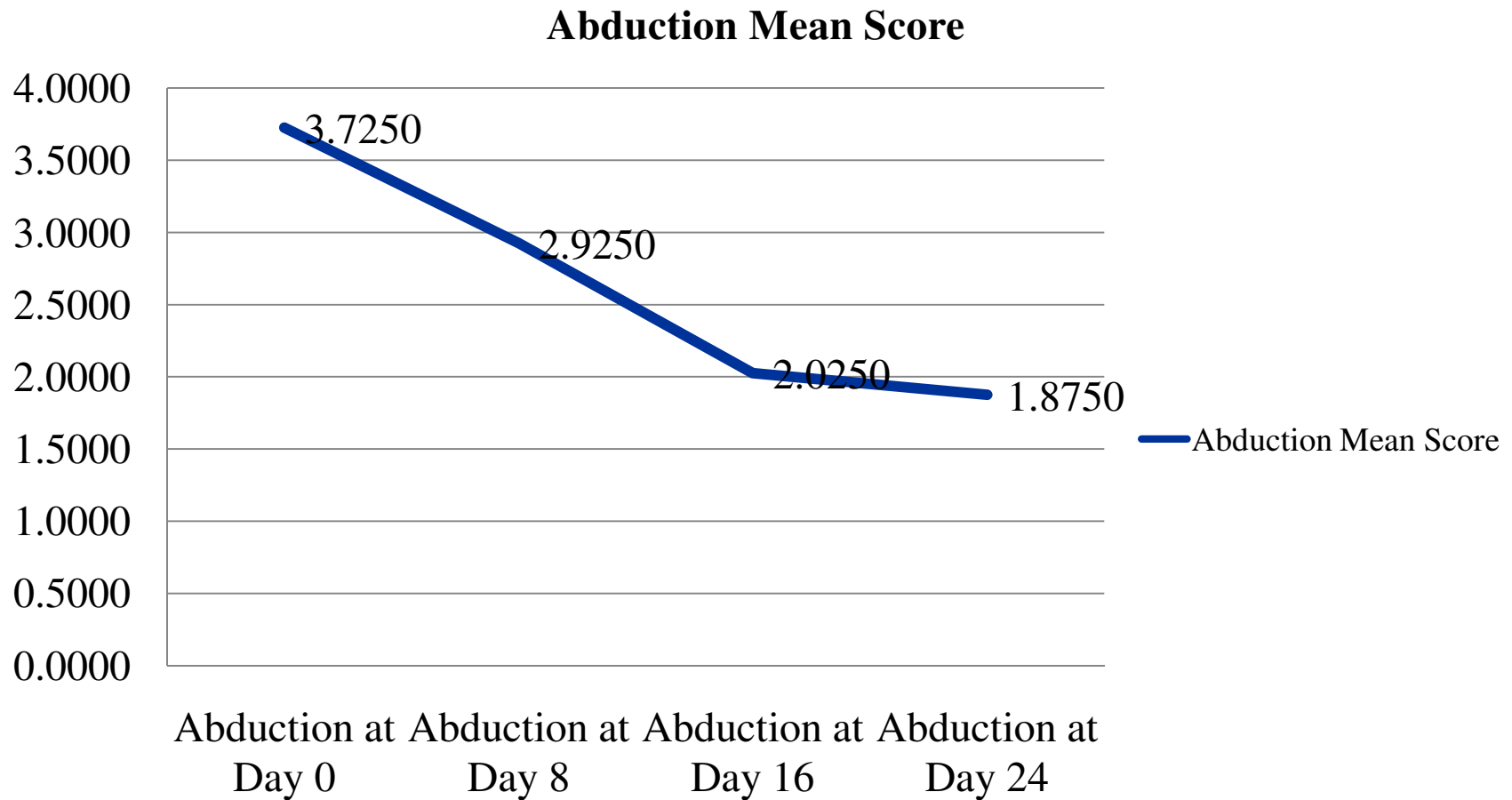


Figure 14. Flexion Mean Score on Day 0, Day 8, Day 16 and Day 24

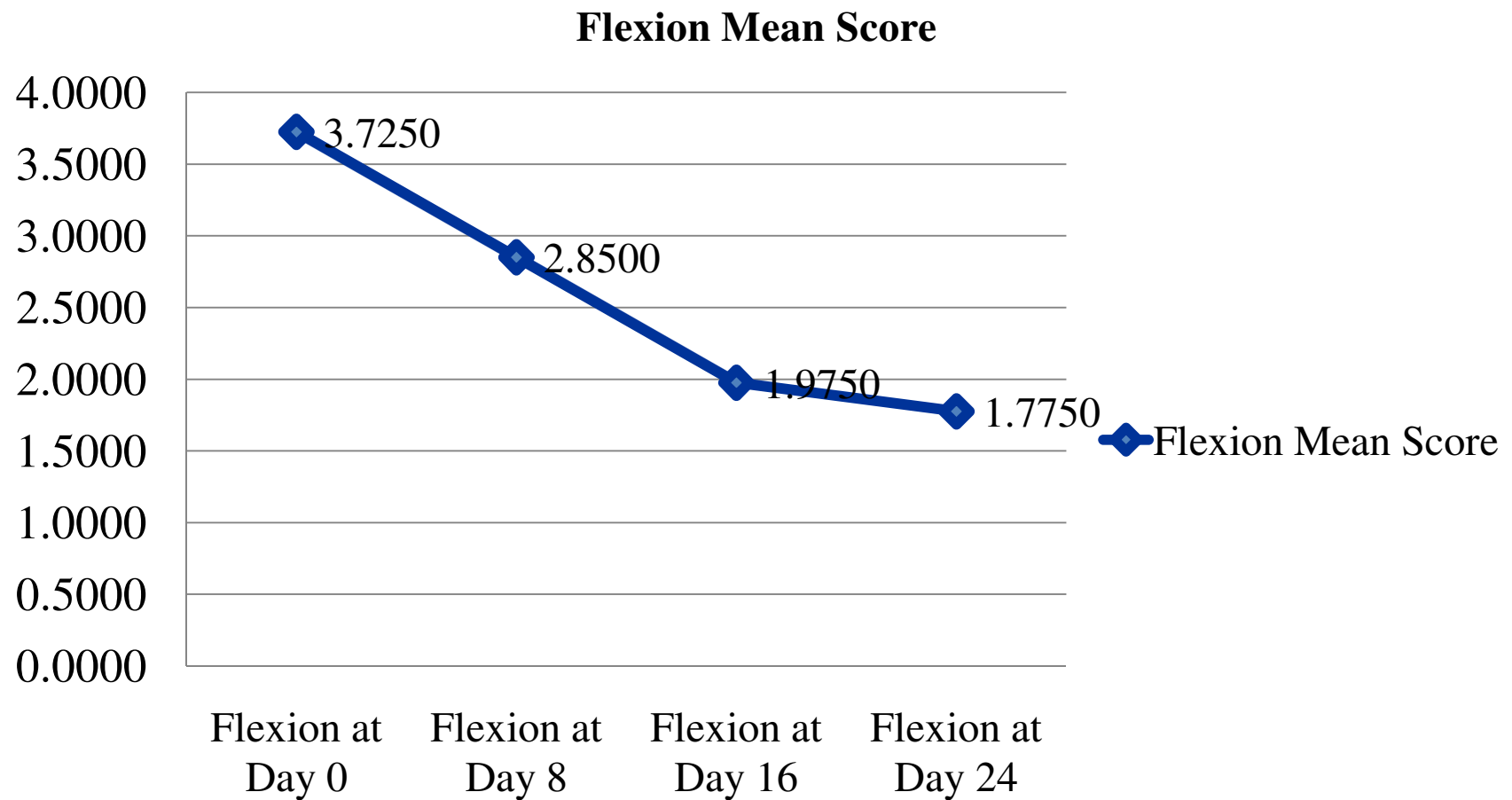


Figure 15. External rotation Mean Score on Day 0 , Day 8, Day 16 and Day 24

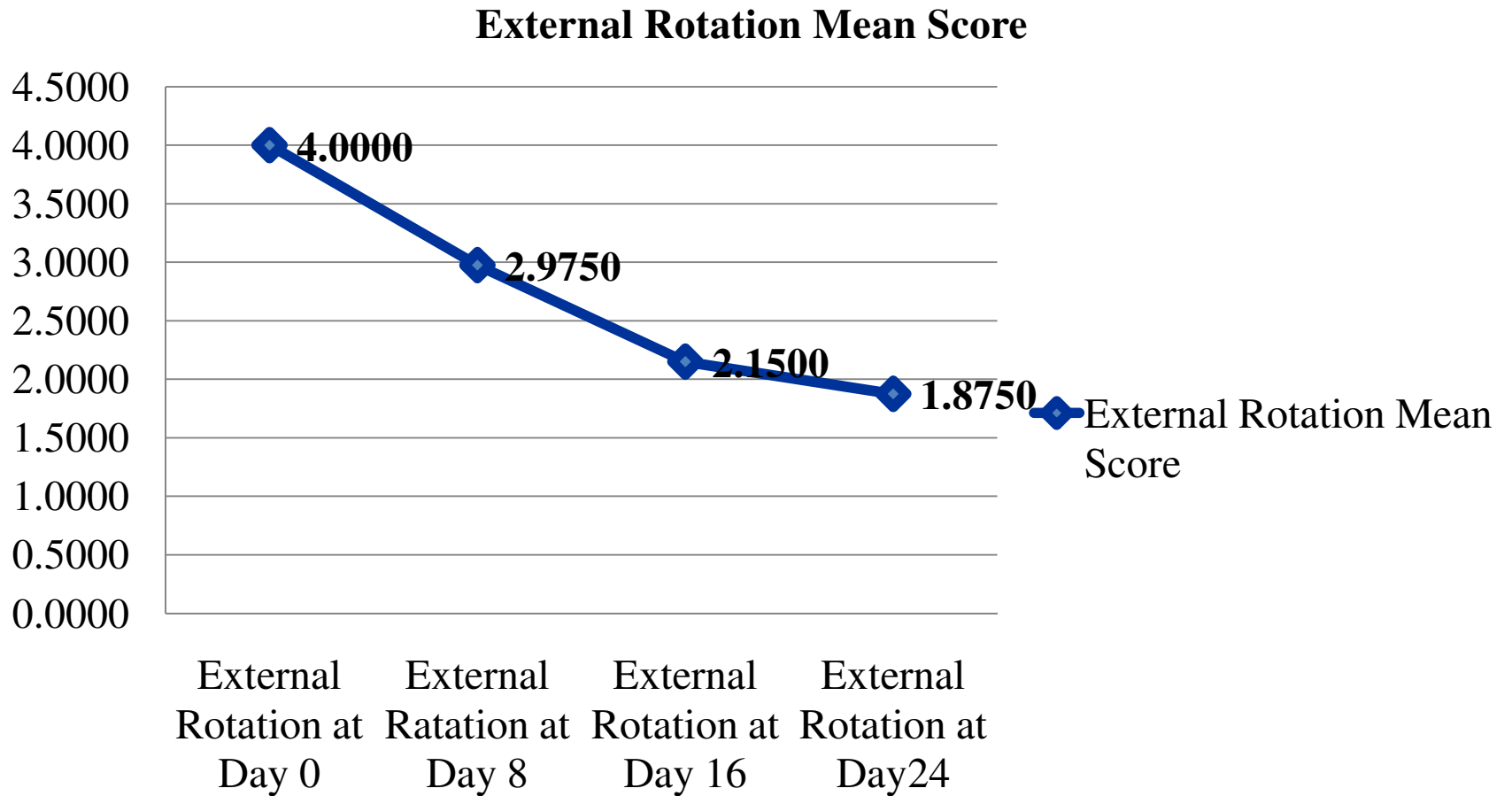


Figure 16. Internal rotation Mean score on day 0 with day 8, day 16 and day 24

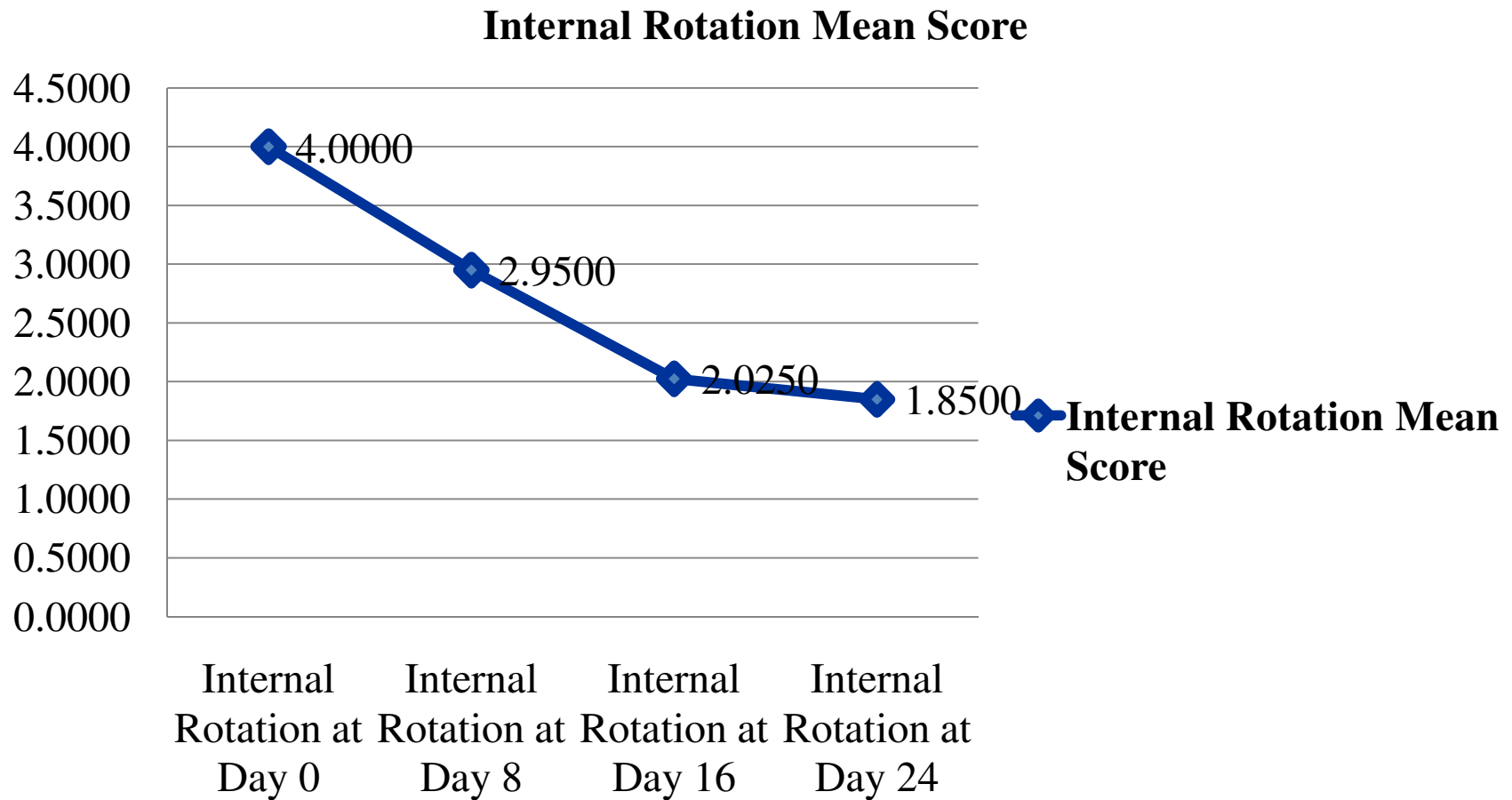


Figure17. Inflammation Mean Score on day 0, day 8, day 16 and day 24

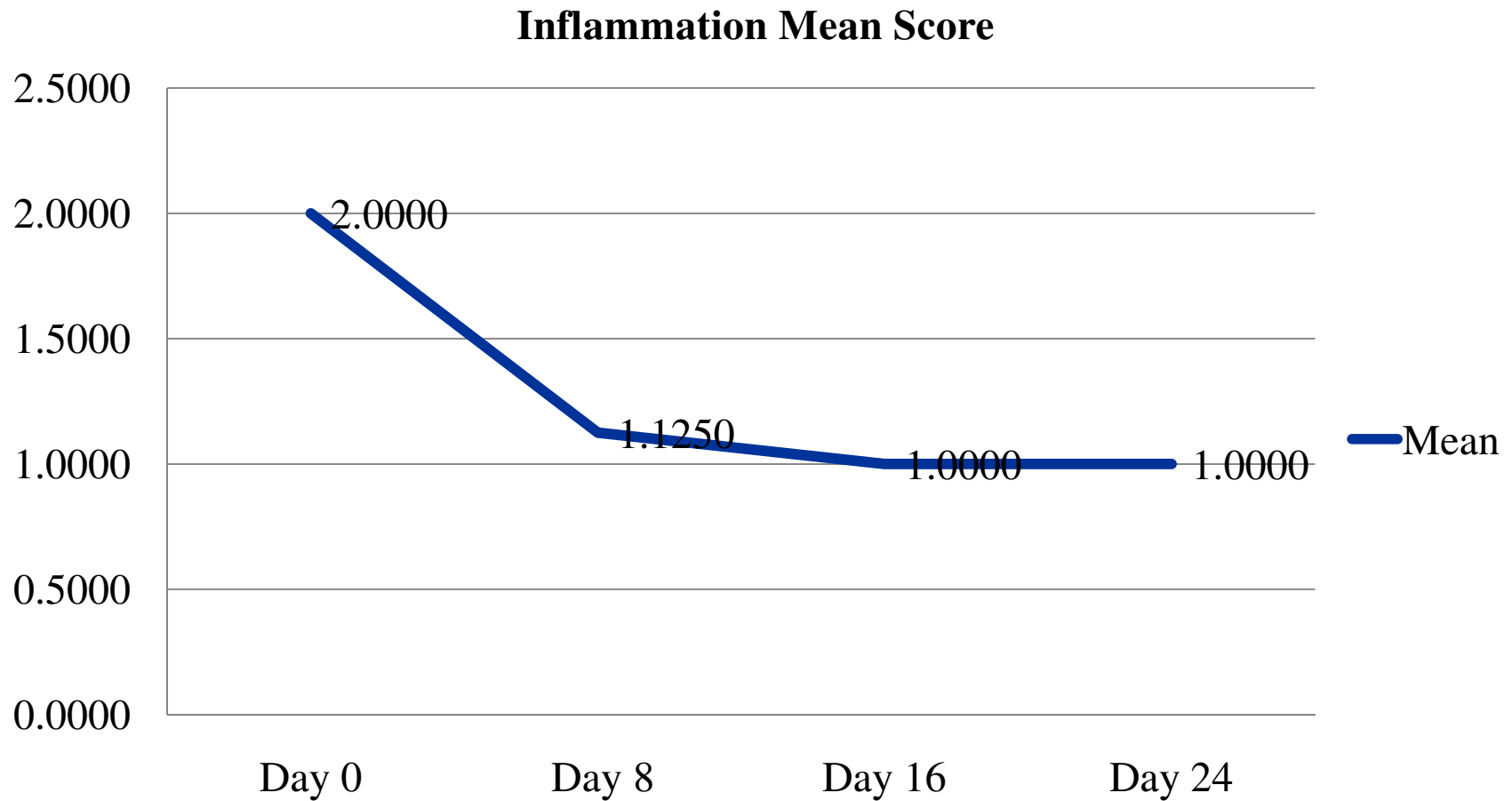


Figure 18. Tenderness Mean Score on day 0, day 8, day 16 and day 24

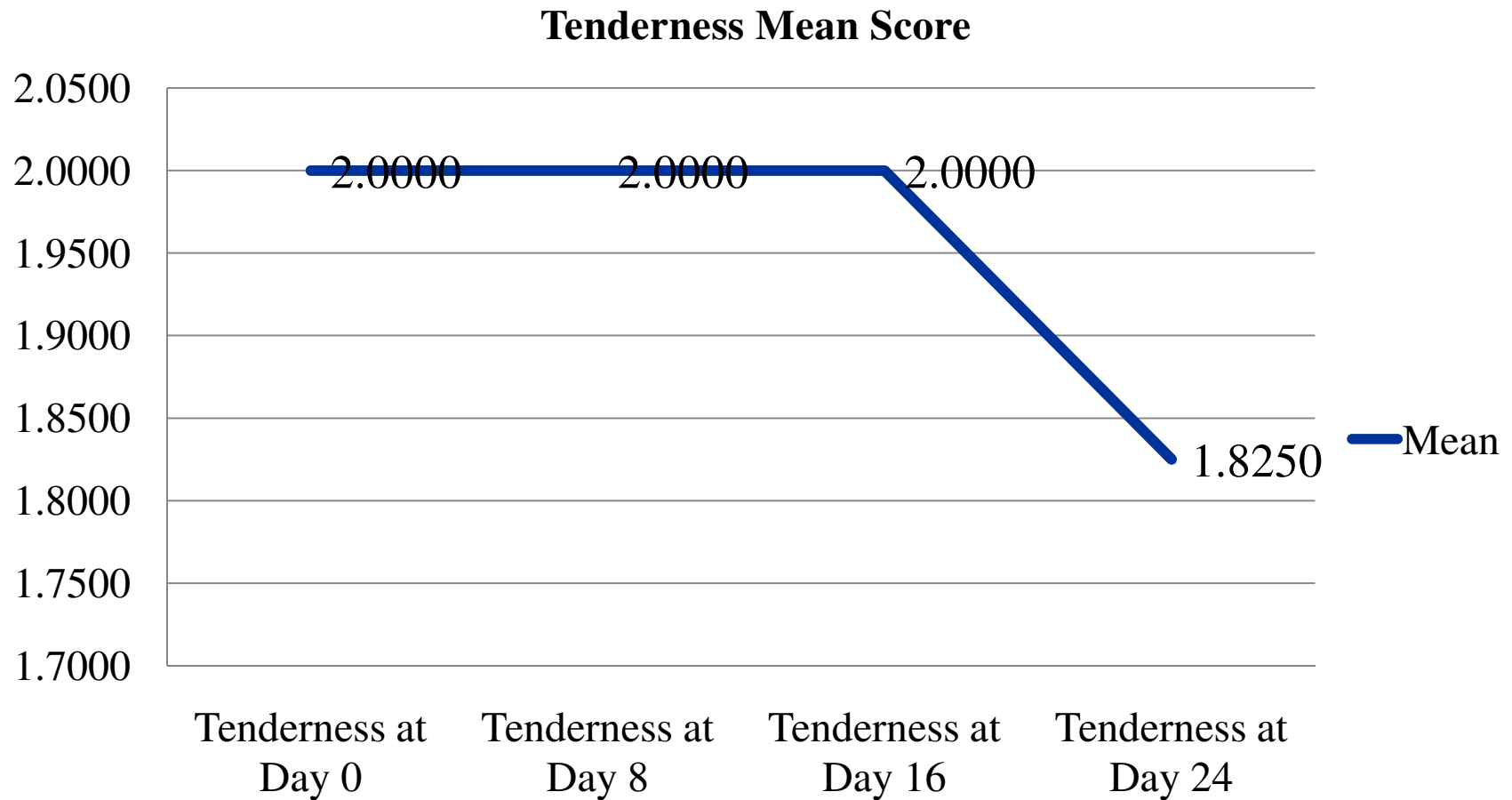


Figure 19. Overall effect of the treatment for frozen shoulder patient base on the percentage

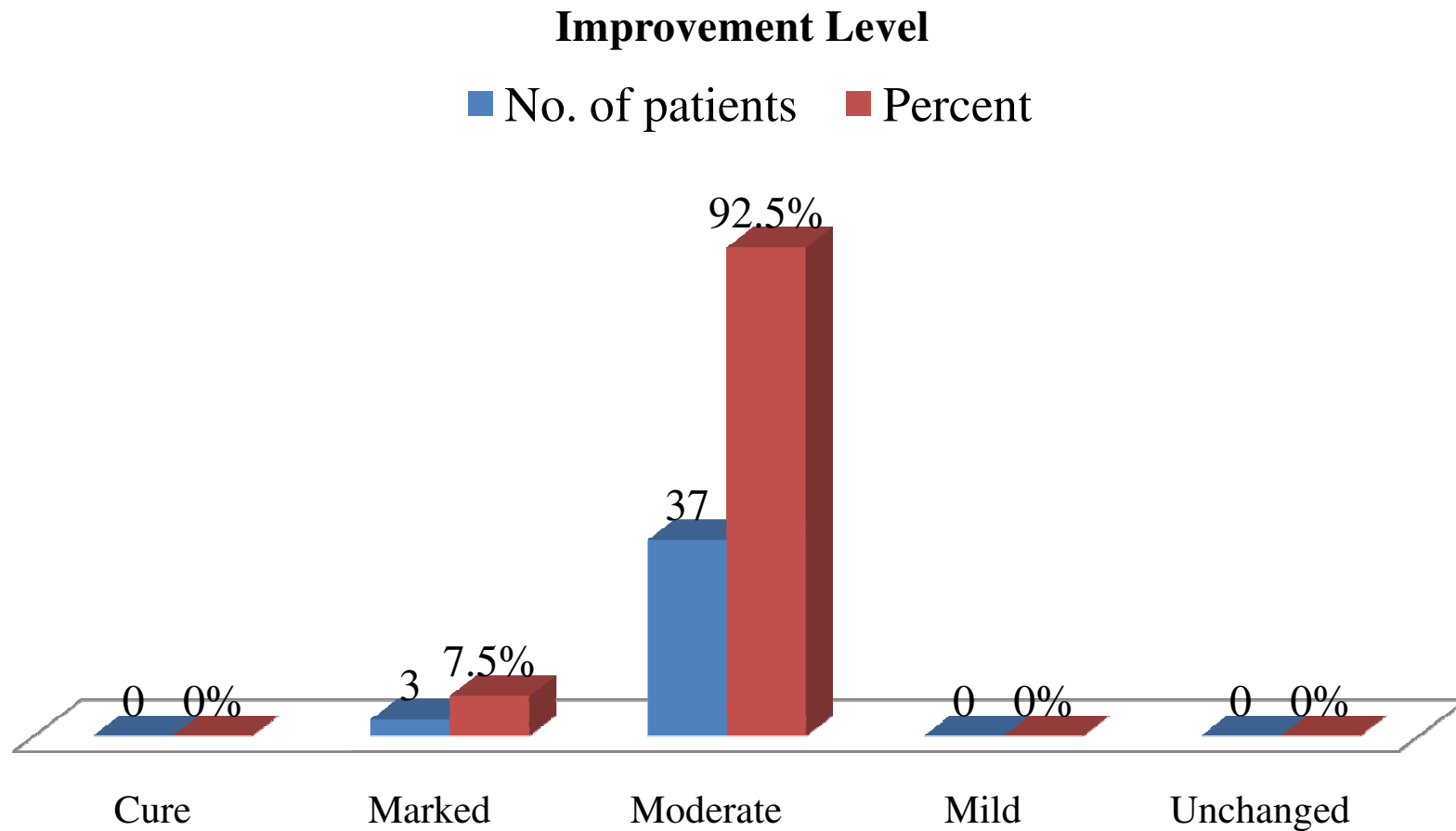


Table 4. Serial improvement of signs and symptoms of Frozen Shoulder patient

No.	Signs and Symptoms	Duration	Mean		Difference	P value
			Before	After		
1	Pain	Day 0-8	4.68	3.25	1.43	.000
		Day 0-16	4.68	1.95	2.73	.000
		Day 0-24	4.68	1.00	3.68	.000
2	Tenderness	Day 0-8	2.00	2.00	0.00	.006
		Day 0-16	2.00	2.00	0.00	.006
		Day 0-24	2.00	1.82	0.18	.006
3	Inflammation	Day 0-8	2.00	1.12	0.88	.000
		Day 0-16	2.00	1.00	1.00	.000
		Day 0-24	2.00	1.00	1.00	.000

Table 5. Serial improvement of signs and symptoms of Frozen Shoulder patient

No.	Signs and Symptoms	Duration	Mean		Difference	P Value
			Before	After		
1	Abduction	Day 0-8	3.72	2.92	0.80	.000
		Day 0-16	3.72	2.02	1.70	.000
		Day 0-24	3.72	1.87	1.85	.000
2	Flexion	Day 0-8	3.72	2.85	0.87	.000
		Day 0-16	3.72	1.97	1.75	.000
		Day 0-24	3.72	1.77	1.95	.000
3	External Rotation	Day 0-8	4.00	2.97	1.03	.000
		Day 0-16	4.00	2.15	1.85	.000
		Day 0-24	4.00	1.87	2.13	.000
4	Internal Rotation	Day 0-8	4.00	2.95	1.05	.000
		Day 0-16	4.00	2.02	1.98	.000
		Day 0-24	4.00	1.87	2.13	.000

Table 6. Overall relief percent on signs and symptoms of Frozen Shoulder patient

No.	Signs and Symptoms	Relief percent	<i>P</i> Value
1	Pain	78.5%	.000
2	Tenderness	8.75%	.006
3	Inflammation	50%	.000
4	Abduction	49.6%	.000
5	Flexion	52.34%	.000
6	External Rotation	53.12%	.000
7	Internal Rotation	53.75%	.000

Table 7. Overall effect of the treatment for frozen shoulder patient base on the percentage

Improvement level	Number of patients	Percent
Cure	0	0
Marked	3	7.5
Moderate	37	92.5
Mild	0	0
Unchanged	0	0

Discussion

- Overall combination effects of *Patrapinda Sweda* and Myanmar Massotherapy on frozen shoulder patients are showing results with marked improvement of 3 patients (7.5%) and moderate improvement of 37 patients (92.5%)
- Overall effect of the treatment for frozen shoulder patients was p value 0.000

Discussion

- Based on the research findings, this treatment by combination of *Patrapinda Sweda* and Myanmar Massotherapy was effective in management of frozen shoulder patients
- This combination treatment is easily available, simple and more economic in practice

Conclusion and Suggestion

- Based on the results of this study, it pointed out that there was serial improvement by combination effect of *Patrapinda Sweda* and Myanmar Massotherapy in the management of frozen shoulder
- It can be concluded that combination of *Patrapinda Sweda* and Myanmar Massotherapy are safe and effective in the management of frozen shoulder during the study period
- Traditional treatment needs clinical trials to evaluate certain treatment regimen as well as to carry out evidenced based traditional medicine

Conclusion and Suggestion

- Although combination effect of *Patrapinda Sweda* and Myanmar Massotherapy is well- indicated for frozen shoulder patients, further studies with other different types of therapy such as acupuncture, *upanaha sweda* therapy and exercise should be done.
- By doing so, comprehensive and quality assurance treatment regimen on frozen shoulder can be performed in future

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References

နာဂသိန် (အရှင်)၊ (၁၉၆၉)။ ဆေးပညာဥပဒေသကျမ်း ဒုတိယတွဲ၊ ဒုတိယအကြိမ်ပုံနှိပ်ခြင်း၊
မင်္ဂလာပုံနှိပ်တိုက်၊ ၁၃၊ ၉၈-လမ်း၊ ရန်ကုန်မြို့၊ ၇၄၇။ (Myanmar)

နာဂသိန် (အရှင်)၊ (၁၉၇၆)။ ပုံပြဆေးအဘိဓာန် ပဌမတွဲ၊ တတိယအကြိမ်ပုံနှိပ်ခြင်း၊
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ကျော်နိုင် (ဦး)၊ (၁၉၉၆)။ မြန်မာ့ရိုးရာအကြောပြင်ပုံ နည်းမျိုးစုံ၊ တတိယအကြိမ်ပုံနှိပ်ခြင်း၊
ရွှေပူရပိုင်စာပေ၊ ဗဟန်း၊ ရန်ကုန်မြို့၊ ၈၂။ (Myanmar)

နာဂသိန် (အရှင်)၊ (၂၀၀၄)။ မြန်မာ့ အာယုဗေဒဆေးသိပ္ပံ မြန်မာ့ရိုးရာ
အကြောပြင်အတတ်ပညာ၊ ဒုတိယအကြိမ်ပုံနှိပ်ခြင်း၊ ပကတိရုပ်ဝန်းစာပေ၊ အလုံ၊
ရန်ကုန်မြို့၊ ၁၉၀။ (Myanmar)

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