

MANAGEMENT OF CALF MUSCLE CRAMPS BY PRASARINI TAILAM IN SPORTSMEN

Dhanokar Nitin Ramrao¹, Dhanokar Anjali Nitin²

¹Associate Professor & HOD Dept.of Rachana Sharir, RPAM, Purna. Maharashtra, India.

²M.D (Rasashastra & Bhaishajya Kalpana), Ayu.Consultant, Saiprabha Ayu. Panchakarma Clinic, Akola, Maharashtra, India

Email: drnitin101@gmail.com

ABSTRACT

A cramp is sudden, prolonged and painful contraction of one or a group of muscle. It occurs usually in the lower extremities and often in the calves. This condition affects the efficiency of Players. In such conditions frequent use of Steroids and Analgesics has hazardous side effects like bleeding tendency (Anti-Platelet action), Skin irritation. Hence it was decided to treat such patients by *Ayurvedic snehana karma* using *Tailam*. The purpose of this treatment is to reduce the pain and relax the calf muscle.

Keywords: Calf muscle cramps, *Snehana*, *Prasarini Tailam*

INTRODUCTION

A muscle cramp is an involuntarily and forcibly contracted muscle that does not relax. When we use the muscles that can be controlled voluntarily, such as those of our arms and legs, they alternately contract and relax as we move our limbs. Muscles that support our head, neck, and trunk contract similarly in a synchronized fashion to maintain our posture. A muscle (or even a few fibers of a muscle) that involuntarily contracts is in a "spasm." If the spasm is forceful and sustained, it becomes a cramp. Muscle cramps often cause a visible or palpable hardening of the involved muscle.

Muscle cramps can last anywhere from a few

seconds to a quarter of an hour or occasionally longer. It is not uncommon for a cramp to recur multiple times until it finally resolves. The cramp may involve a part of a muscle, the entire muscle, or several muscles that usually act together. Some cramps involve the simultaneous contraction of muscles that ordinarily move body parts in opposite directions.

Muscle cramps are extremely common. Almost everyone (one estimate is about 95%) experiences a cramp at some time in their life. Any of the muscles that are under our voluntary control (skeletal muscles) can cramp. Cramps of the extremities, especially the legs

and feet, and most particularly the calf (the classic "charley horse"), are very common. Involuntary muscles of the various organs (uterus, blood vessel wall, bowels, bile and urine passages, bronchial tree, etc.) are also subject to cramps. Cramps of the involuntary muscles will not be further considered here. This article focuses on cramps of skeletal muscle most particularly the calf.

Skeletal muscle cramps can be categorized into four major types. These include true cramps, tetany, contractures, and dystonic cramps.

Ayurvedic Perspective of Calf Muscle Cramps

Strenuous exercise, vigorous activities (*Atishrama*), Improper dietary habits (*Viruddha Ahara-vihara*) vitiates *Vata*. This vitiated *Vata* lodges (*Sthansamsraya*) at calf region in Sportsmen as there is "*Kha-vaigunya*" in this region.

The symptoms expressed by these patients are severe pain, stiffness in calf muscle. The muscle become tender, which is similar to the symptoms of "*Mamsagatavata*", mentioned in different classics of *Ayurveda*–

Angaguruta - heaviness of body part (calf muscle),

Atiruka - severe pain in muscles (calf muscle),

Stabdhata - stiffness in the

muscle (calf muscle),

Granthi - hard mass-like feeling of muscle,

Mustidanda hatah - sensation of beating with fist and sticks.

Aim:-

To study the management of calf muscle cramps by *Prasarini Tailam* in Sportsmen.

Materials and Methods:-

The drug used for the treatment is *Prasarini Tailam*.

It contains *Prasarini*, *Shatavari*, *Shatapushpa*, *Manjista*, *Kustha*, *Rasna*, *Vidarikanda*, *Ashwagandha* *Vrudhadaru*.

Criteria for selection of *Prasarini Tailam*:

In Sportsmen vigorous activities can cause hyper excitability of the nerves that stimulate the muscles and increases cramps. *Prasarini Tailam* soothes excited nerves also balances *Vata* and *Kapha*. It is used for massage and external application wherever there is pain along with stiffness. There are no known side effects with this oil on external application. So, an effort was made to use *Prasarini Tailam* in Calf muscle cramps.

Control group was *Tila Tailam*.

Methodology:-

60 Players of Calf muscle cramps were selected for the study.

Table 1:

Sr. No.	Group	Tailam	No. of Pts	Dose of local <i>Sneha</i> applied	Duration
1	Subject	<i>Prasarini</i>	30	40 - 50 ml/day	7 days
2	Control	<i>Tila</i>	30	40 - 50 ml/day	7 days

Bashpa sweda (Fomentation) was given to all patients for 15 mins after *Snehana*.

Inclusion Criteria:

Sportsmen having muscle cramps during sports activity.i.e Kho-Kho, Kabaddi, Volley ball.

Age group- 18 to 28 yrs.

Sex- Both Male and Female

In Subject group –

1) Age 18-23 years- 15 male and 8 female

2) Age 24-28 years- 4 male and 3 female

In Control group –

1) Age 18-23 years- 13 male and 9 female

2) Age 24-28 years- 5 male and 3 female

Exclusion Criteria:

NLC- Nocturnal leg cramps

Vascular diseases-

Injury (Fracture) induced cramps

Tetany

Contractures

Criteria of Assessment:

1. Pain in calf muscle. (Numeric rating scale-NRS-11)

There is 0 - 10 cm horizontal line for pain assessment.

0 was marked at the left end. 10 at right end. 0 indicate no pain. 10 indicate most severe pain.

Each cm indicates digits from 0 to 10. Patients were asked to grade their pain and define accordingly in numbers.

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

0= No pain

1= 4 (Mild)

2=5-8 (Moderate)

3= 9-10 (Severe)

Frequency of attack of cramps

It was measured at the interval of 7 days.

0= 0/7 days

1=1-2/7 days (Mild)

2=3-4/7 days (Moderate)

3=5-7/7 days (Severe)

3. Intensity of Stiffness of Calf muscle

0=No stiffness

1=0-5 min (Mild)

2=6-10 min (Moderate)

3=11-15 min (Severe)

These criteria's were observed before treatment and after treatment.

Observations and Results:-

Snehana was done for 7 days and after next 3 weeks following changes were observed.

Table 2: Follow up After 7 days of treatment

Sr. No.	Study Group	Significant Reduction of		
		Pain	Frequency	Intensity of Stiffness
1	Subject Group	20 Patients	27 Patients	26 Patients
2	Control Group	17 Patients	26 Patients	23 Patients

Table 3: Follow up After 14 days of treatment

Sr. No.	Study Group	Significant Reduction of		
		Pain	Frequency	Intensity of Stiffness
1	Subject Group	15 Patients	15 Patients	12 Patients
2	Control Group	13 Patients	08 Patients	15 Patients

Table 4: Follow up After 21 days of treatment

Sr. No.	Study Group	Significant Reduction of		
		Pain	Frequency	Intensity of Stiffness
1	Subject Group	15 Patients	18 Patients	13 Patients
2	Control Group	8 Patients	11 Patients	12 Patients

Table 5: Percentage of Follow up After 21 days of treatment

Table 5 a: Subject group

Symptoms	Partial reduction	Significant reduction	No reduction
Pain	30 % of cases	50% of cases	20 % of cases
Frequency	26.66 % of cases	60 % of cases	13.33% of cases
Intensity of Stiffness	23.33% of cases	43.33 % of cases	33.33% of cases

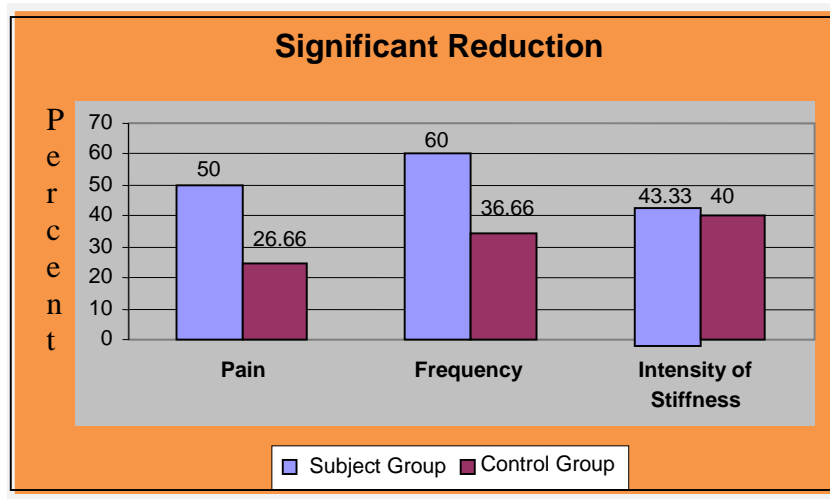
Table 5 b: Control group

Symptoms	Partial reduction	Significant reduction	No reduction
Pain	43.33% of cases	26.66 % of cases	30% of cases
Frequency	13.33% of cases	36.66% of cases	50 % of cases
Intensity of Stiffness	16.66 % of cases	40% of cases	43.33 % of cases

Table 6: Comparison of Significant reduction in Symptoms after 21 days of treatment

Sr. No.	Study Group	Significant Reduction of		
		Pain	Frequency	Intensity of Stiffness
1	Subject Group	50 % of cases	60 % of cases	43.33 % of cases
2	Control Group	26.66 % of cases	36.66 % of cases	40 % of cases

Picture1:



The data on Pain and Stiffness was analyzed using the statistical methods.

T test for comparison within the groups and **Z test** between the groups to study the performance of the Subject group (Prasarini Tail) over the Control group (Tila tail).

The result of T test indicated that within group there was significant reduction in Pain as well as stiffness indicating that in both the groups

the time period has effect on reduction. The results are presented in Table no 7 & Table no 8.

The average value for pain and stiffness along with the Z values are presented in Table no 9 & Table no 10. It is reverted from the table that there was significant reduction in Pain as well as Stiffness in Subject group than that of the control group.

Table 7: PAIN

Table 7 a: Subject group

	Before Treatment	7 Days	14 Days	21 Days
AVG	7.266667	3.3	3.6	3.533333
SD	2.420221	3.207212	3.399797	3.390996
SE	0.441646	0.585258	0.620401	0.618795
T CAL		7.16**	8.7**	9.06**

Table 7 b: Control group

	Before Treatment	7 Days	14 Days	21 Days
AVG	7.666667	4.8	5.4	5.9
SD	2.005739	2.46912	2.847867	2.61758
SE	0.366011	0.450569	0.519684	0.477661
T CAL		8.09**	5.09**	4.69**

Table 8: STIFFNESS

Table 8 a: Subject group

	Before Treatment	7 Days	14 Days	21 Days
AVG	2.2	0.866667	0.966667	0.933333
SD	0.886683	0.730297	0.850287	0.907187
SE	0.161803	0.133266	0.155162	0.165545
T CAL		9.11**	5.95**	5.52**

Table 8 b: Control group

	Before Treatment	7 Days	14 Days	21 Days
AVG	2.166667	1.066667	1.433333	1.6
SD	0.74664	0.907187	0.935261	1.069966
SE	0.136248	0.165545	0.170668	0.195249
T CAL		5.36**	3.2**	2.34**

Table 9: PAIN

		Before Treatment	7 Days	14 Days	21 Days
Subject group	AVG	7.27	3.30	3.60	3.53
	SD	2.42	3.20	3.40	3.39
Control group	AVG	7.67	4.80	5.40	5.90
	SD	2.005	2.47	2.85	2.62
Z value		0.99 ^{NS}	2.90**	3.16**	4.32**

Table 10: STIFFNESS

		Before Treatment	7 Days	14 Days	21 Days
Subject group	AVG	2.20	0.87	0.97	0.93
	SD	0.89	0.73	0.85	0.90
Control group	AVG	2.17	1.07	1.43	1.60
	SD	0.75	0.91	0.94	1.07
Z value		0.23 ^{NS}	2.34*	2.86**	3.70**

* Significant at 5% level of Significance

** Significant at 1% level of Significance

^{NS} Non Significant

Table 11:

Sr.No.	Ingredients	Botanical Names	Guna / Rasa / Virya	Karma
1	Prasarini	<i>Paederia Foetida</i>	Guru, Ushna	Vataghna,,Stabdhatanashaka, Vedanasthapaka, Reduces gaurava
2	Shatavari	<i>Asparagus Race-mosus</i>	Guru, Sheeta, Tikta	Vatashamaka, Balya, Bruhana
3	Manjista	<i>Rubia Cordifolia</i>	Guru, Ushna	Vatashamaka
4	Kustha	<i>Saussurea Lappa</i>	Snigdha, Ushna	Vatashamaka
5	Shatapushpa	<i>Anethumsowa</i>	Ushna	Vataghna
6	Rasana	<i>Pluchea Lanceolata</i>	Guru, Ushna, Tikta	Vatashamaka,Vatanulomana, Vedanashamaka
7	Vidarikanda	<i>Pueraria Tuberosa</i>	Snigdha, Madhura	Bruhana, Rasayana
8	Ashwagandha	<i>Withania Somnifera</i>	Guru, Ushna,Tikta	Vatshamaka, Balya, Rasayana
9	Vrudhadaru	<i>Argyreia Speciosa</i>	Snigdha, Ushna	Vatashamaka

DISCUSSION

In Sportsmen the calf muscle cramps is due to Vata prakopa by Chala, Sheeta, Ruksha and Laghu guna.

Tila Tailam is Madhura rasa, Ushna virya and hence Vatashamaka.

Prasarini Tailam contains:-

Shatavari, Vidarikanda are Sthira, Guru, Snigdha so they compensate Chala, Laghu and Ruksha guna of Vata.

Prasarini, Manjista, Kustha Shatapushpa, Rasna, Ashwagandha, Vrudhadaru are Ushna

so they compensate *Sheeta guna* of *Vata*. *Snigdha* and *Ushna guna* of *Prasarini Tailam* reduces the calf muscle Stiffness. *Prasarini Tailam* is applied locally (*Snehana*) for 7 days. So the *Satatyā* in the treatment reduces the Frequency of Calf muscle cramps. In Sportsmen vigorous activities can cause hyperexcit ability of the nerves that stimulate the muscles and increases cramps. *Prasarini Tailam* soothes excited nerves. The mechanism of *Vayu* is disturbed in such circumstances and it is maintained by *Ushna virya* & *Katu-Tikta rasa* of *Prasarini* which acts as *Vatanulomaka*.

CONCLUSION

Subject group (*Prasarini Tailam*) is more effective as compared to Control group (*Tila Tailam*) in the management of calf muscle cramps in Sportsmen. It may be adopted as treatment of choice in calf muscle cramps of Sportsmen.

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