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ROLE OF *VEDANASTHAPANA MAHAKASHAY* (DECOCTION), *KATI BASTI* &*YOGA* MODALITIES IN THE MANAGEMENT OF ACUTE LUMBOSACRAL SPRAIN/STRAIN

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ABSTRACT

Low back pain is one of the most common musculoskeletal problems in modern society. The most common causes of low back pain are musculo-ligamentous sprains and strains, which occur mainly at the lumbo-sacral region secondary to various injuries. Typical symptoms are pain and spasm range from sharp and stabbing to a dull ache are localized over the posterior lumbar spinal muscle bellies lateral to the spinous process or at the insertion of the muscle at the iliac crest. As per Ayurveda Lumbo-sacral sprain/strain can be correlated to *kati shoola*. *Kati shoola* has not been described as a separate disease entity in any classics and it described as a symptom in various diseases especially in *Vata Vyadhi*. Aims of present clinical study are to scrutinize the available literature for related conditions in Ayurveda & Lumbosacral Sprain/strain in contemporary science and to study the efficacy of *Vedanasthapana Mahakashay* (Decoction), *Kati Basti with Dashmool taila* & Yoga modalities in the management of Lumbo-sacral Sprain/strain on clinical parameters and to establish the protocol.

KEYWORDS: Lumbo-sacral Sprains and Strains, *VedanaSthapana*, *Kati Basti*.

INTRODUCTION

Today's fast and tense life style of human being has created several dissonances in his biological system. Among those low back pain (LBP) is becoming a significant threat in working population. Either both male and female overall prevalence is similar in this condition. Nearly everyone experience some form of back pain in his or her lifetime. The estimated worldwide lifetime prevalence of low back pain varies from 50% to 84%.[1] Studies in developed countries have shown that the low back pain point prevalence was 6.8% in North America, 13.7% in Denmark, 12% in Sweden, 14% in the United Kingdom, 33% in Belgium, and 28.4% in Canada. Similarly, some studies in developing countries have revealed much higher incidence of 72.4% in Nigeria, 64% in China, and 56.2% in Thailand.[1] The occurrence of low back pain in India is also alarming with nearly 60% of the people in India have suffered from low back pain at some time during their lifespan.[1] The most common causes of low back pain in most of cases are musculoligamentous sprains and strains, which occur mainly at the Lumbo-sacral region.

Most of the sports injuries, jobs involving pulling, lifting, or twisting with the low back, carrying an overstuffed briefcase, handbag, heavy backpack ,prolonged sitting in an awkward position, and prolonged standing can cause sprains of the ligaments or strains of the muscles surrounding the spine in Lumbo-sacral region. The sprains/strains results in overstretching & microscopic tears of varying degrees in muscles of lower back & ligaments present at the front, back, as well as in between the transverse processes of lumbar vertebrae, sacroiliac joints and Ilio-lumbar ligament. Typical symptoms are pain and spasm, range from sharp and stabbing to a dull ache are localized over the posterior lumbar spinal muscle bellies lateral to the spinous process or at the insertion of the muscle at the iliac crest. The area may be tender to touch or there may be some swelling. The diagnosis of lumbo-sacral sprain/strain is

based on the history, the location of the pain, and exclusion of nervous involvement.

Most (90%) Lumbo-sacral injuries have been reported to subside within 6 weeks irrespective of treatment. The remaining 10% of such injuries may develop into chronic Lumbo-sacral pain without treatment. Required expertise to manage the condition is not available in ample amount & existing /current methods of treatment are often much time consuming with variable outcome.

As per Ayurveda Lumbo-sacral sprain/strain can be correlated to *kati shoola*. *Kati shoola* has not been described as a separate disease entity in any classics and it described as a symptom in various diseases especially in *Vata Vyadhi*.Many related terms has been used in various ayurveda texts for the conditions having pain and discomfort around lower back as, *Katiruja, Katistambh, Katigrah,Katibhanjanam, Trikashool* etc. Reference texts of Ayurveda possess variety of medications and management schedules in different forms both for internal usage as well external application concerning the management of above said conditions. So taking the lead from the reference text, so as to design standard Ayurvedic management protocol for Lumbo-sacral Sprain/strain (*kati shoola).*

The present study **"Role of *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* Modalities In The Management of Acute Lumbo-sacral Sprain/Strain"** has been designed with the following aims and objectives,

- To Study the efficacy of *VedanaSthapana Mahakashay (Decoction),*[1] *Kati Basti,* & *Yoga* modalities in the management of Acute Lumbo-sacral Sprain/strain on clinical parameters.
- To come forward with standard Ayurvedic management for Acute Lumbo-sacral Sprain/strain.

MATERIALS AND METHODS

Selection of Patient

30 clinically diagnosed Patients of Acute Lumbo-sacral Sprain/Strain have been selected from the OPD & IPD units of PG Department of Shalya Tantra NIA, Jaipur.

A) Age group - Between 20-60 yrs
B) Gender - Either Gender
C) Study Design- Randomized (based upon computer based random table for allocation)
D) Study Center - Uni-central
E) Sample Size and Method- Total 30 Patients

Inclusion Criteria

a. Patients with typical clinical features pertaining to Acute Lumbo-sacral sprain/strain
b. Age 20-60 year.
c. Either gender.
d. Patients willing to undergo trial.

Exclusion Criteria

a. Not willing to undergo trial.
b. Patients reporting after initial 48 hours of Injury.
c. Chronic Lumbo-sacral sprain/strain.
d. Suffering from specific variety of conditions like infective lesions,skeletal injuries fractures, spondylolisthesis/disc prolapsed with lumber canal stenosis or rediculopathies.
e. Patients having TB, Hypertension, Diabetes, Cardiac disorder, or some constitutional disorders, any Joint disease (viz RA,OA, Gout)

Pre Treatment Observation

Counseling and Informed Consent-After initial counseling patients were supplied the informed consent proforma both in English and Hindi. Patients unable to read were asked to get the consent form read by family member. They, if after going through the form were willing to get registered for the study, were asked to return the form after putting signature of the subject and attendant.

Grouping

Clinical study has been carried out as following two groups of patients.

Minimum number of patients taken - 30 patients

1. Control group (Group A) - 15 patients
2. Trial group (Group B) - 15 patients

Control group (Group A) patients has been managed with

1. Acute Phase (initial 48 hours)

- Cold therapy for a short period (up to 48 h) was applied to the affected area.
- DiclofenacPottassium50mg twice daily for next 1 week (acute/recovery phase)

2. Recovery Phase (5 days)

Physical therapy with therapeutic ultrasound daily over affected region for the duration of 5 minutes for 5 days in the recovery phase.

3. Maintenance Phase (7 days)

Rehabilitation programme to attain balance between muscle strengthening and flexibility following proprioceptive neuromuscular facilitation (PNF) 15 minutes daily for next 7 days, particularly focusing the abdominal, paraspinal, and hip muscles advised.

No other drugs like sedatives, muscle relaxants or adjuvant like steroids, multivitamins etc. has been allowed in both the groups.

Trial group (Group B) patients has been managed with

1. Acute Phase (initial 48 hours)

- Cold therapy for a short period (up to 48 h) was applied to the affected area.
- *VedanaSthapana Mahakashay* (Decoction) 30 ml twice daily for next 1 week (acute/recovery phase)

2. Recovery Phase (5 days)
Physical therapy with *Kati Basti* followed by soft-tissue sports massage daily for the duration of 45 minutes for 5 days with *Dashmool tail* in the recovery phase

3. Maintenance Phase (7 days)
Rehabilitation Programme to attain balance between muscle strengthening and flexibility *Yoga* modalities (*SukshamVyayama, Janushirsasana Trikonasana, Pavanmuktasana Naukasana, Shalabhasana Bhujangasana Ushtrasana, Shavasana*.) 15minutes daily for next 7 days, particularly focusing the abdominal, paraspinal, and hip muscles advised.

Duration of trial - 15 days in each group.

Criteria for assessment
Subjective criteria
Objective criteria

Subjective criteria
1. Pain (Low backache)
Assessed on simple verbal scale (SVS)

Simple Verbal Scale (SVS) - In this method, patient himself expresses the feeling of improvement. This is generally called as simple verbal scale (SVS) because in this, the patient expresses his feelings of improvement.

Degree of severity
In this method the degree of severity of pain is noted as per below mentioned criteria

No pain	- 0
Mild pain	- 1
Moderate pain	- 2
Severe pain	- 3

Criteria in detail

No pain (0)	-No pain at rest
	No pain while working
	No disturbance of sleep due to pain
Mild pain (1)	-No pain at rest
	Mild and tolerable pain while working
	No disturbance of sleep due to pain

Moderate pain (2) - Mild pain at rest
Moderate & tolerable pain while working
No disturbance of sleep due to pain
Severe pain (3) - Moderate pain at rest
Severe and intolerable pain while working
Disturbance of sleep due to pain

Objective criteria
1. Tenderness (using Pressure algometer)
It is measured with an algometer, a device with a force gauge and rubber disc of $1cm^2$ surface. The tip of the algometer is placed at the point to be examined, at an angle perpendicular to the surface of the skin. The pressure is applied at rate of 5N/sec and patient is instructed to say "stop" or indicate when the sensation changes from comfortable pressure to discomfort.

Pressure pain threshold (PPT)…… **Newton or Kg/cm^2**

2. Movements
(I) Forward flexion
With finger tips able to

a)	Touch his / her toes.	(Gr.-0)
b)	Reach with in 10 cm. from floor.	(Gr.-I)
c)	Reach mid tibia	(Gr.-II)
d)	Up to knees.	(Gr.-III)
e)	No bending at all.	(Gr.-IV)

(II) Lateral flexion

With finger tips reach up to:		**Right**	**Left**
a)	Mid tibia	(Gr.-0)	(Gr.-0)
b)	Knees	(Gr.-I)	(Gr.-I)
c)	Mid thigh	(Gr.-II)	(Gr.-II)
d)	No bending at all	(Gr.-III)	(Gr.-III)

(III) Extension
I. Smooth / regular /painless
II. Restricted / painful.
III. No Extension

(IV) Rotation
I. Smooth / regular / painless
II. Restricted / painful
III. No rotation

Assessment was done before trial (BT) i.e. before commencement of the intervention and after trial (AT) at the completion of trial.

Duration of trial -15 days in each group.

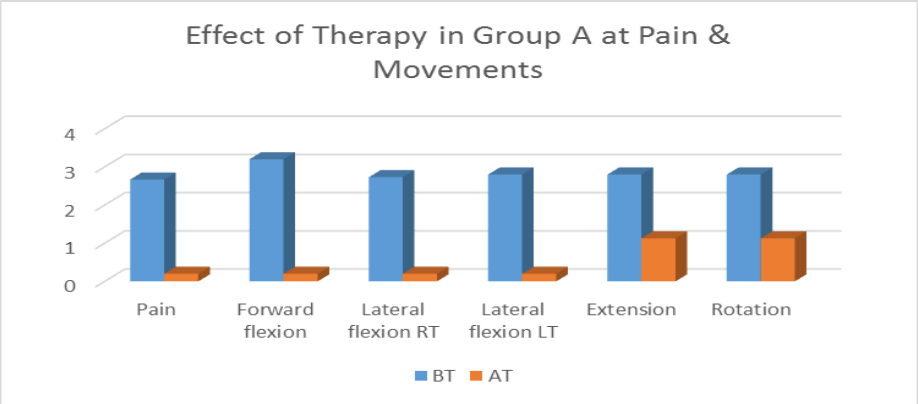
Statistical Analysis
The result was assessed on the basis of relief in parameter.

- Intra group comparison at Pain & Movements was done by using Wilcoxon matched-pairs signed rank test and at Tenderness by using Paired t test.
- Comparison between two groups (Intergroup Comparison) at Pain & Movements was done by using Mann Whitney test and at Tenderness by using Unpaired t test.
- The data was assessed for its statistical significance.
- 30 patients who finally completed the trial, were divided into 2 groups of 15 patients in each group. results obtained in the Control and Trial group are represented separately.

OBSERVATION AND RESULT

Table 1: Effect of Intervention on Essential Clinical Features In Terms of Grades In Control Group (GROUP-A)

Symptom	Mean score		Diff.	Diff%	SD	SE	P Value	Sig
	BT	AT						
Pain	2.67	0.20	2.47	92.50	0.793	0.198	<0.0001	HS
Tenderness	20.80	36.27	15.47	74.36	4.82	1.25	<0.0001	HS
Forward Flexion	3.20	0.20	3.00	93.75	0.981	0.245	<0.0001	HS
Lateral Flexion(Rt.)	2.73	0.20	2.53	92.67	0.806	0.202	<0.0001	HS
Lateral Flexion(Lt.)	2.80	0.20	2.60	92.85	0.814	0.203	<0.0001	HS
Extension	2.80	1.13	1.67	59.64	0.629	0.157	<0.0001	HS
Rotation	2.80	1.13	1.67	59.64	0.629	0.157	<0.0001	HS



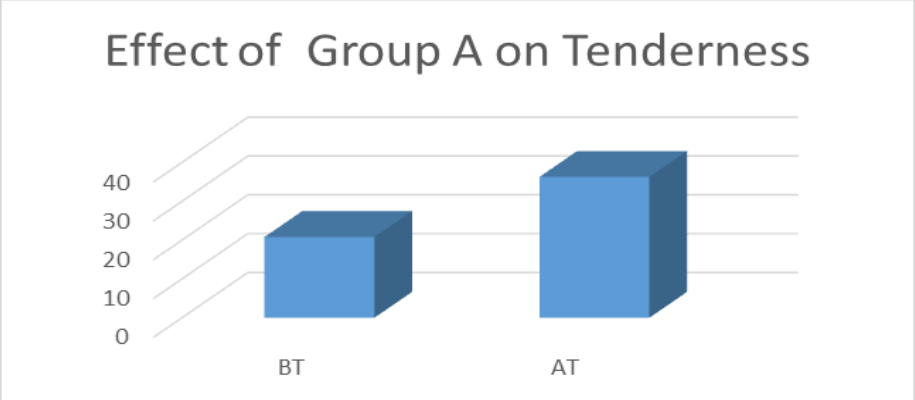
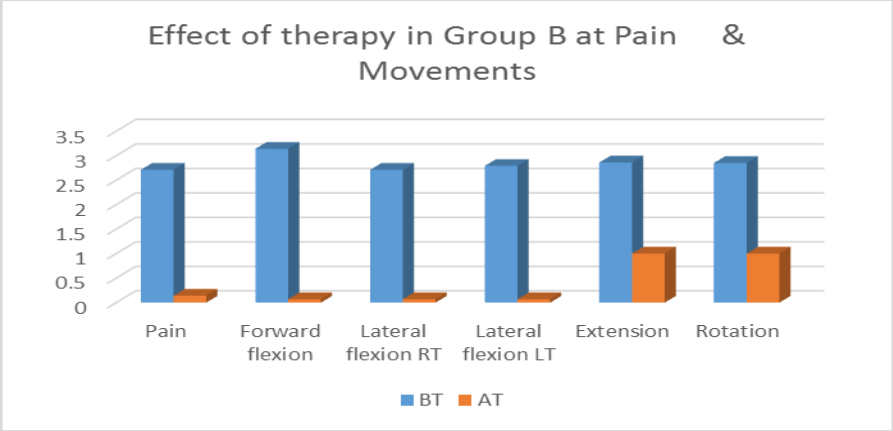


Table 2: Effect of Intervention on Essential Clinical Features In Terms of Grades In Trial Group (Group B).

Symptom	Mean score		Diff.	Diff%	SD	SEM	P Value	Sig
	BT	AT						
Pain	2.71	0.14	2.57	94.83	1.100	0.284	<0.0001	HS
Tenderness	22.07	39.53	17.47	79.15	11.13	2.87	<0.0001	HS
Forward Flexion	3.14	0.07	3.07	97.77	1.234	0.319	<0.0001	HS
Lateral Flexion(Rt.)	2.71	0.07	2.64	97.41	1.033	0.267	<0.0001	HS
Lateral Flexion(Lt.)	2.79	0.07	2.71	97.13	1.047	0.270	<0.0001	HS
Extension	2.86	1.00	1.86	65.03	0.737	0.190	<0.0001	HS
Rotation	2.85	1.00	1.85	64.91	0.737	0.190	<0.0001	HS



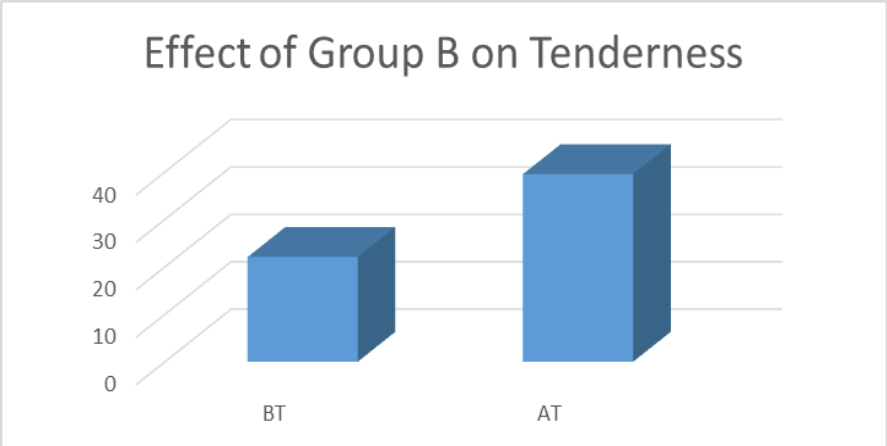
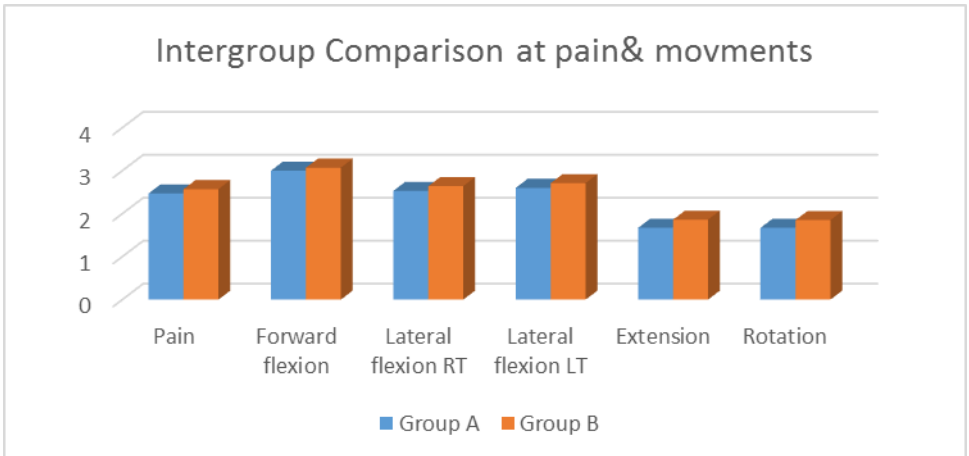


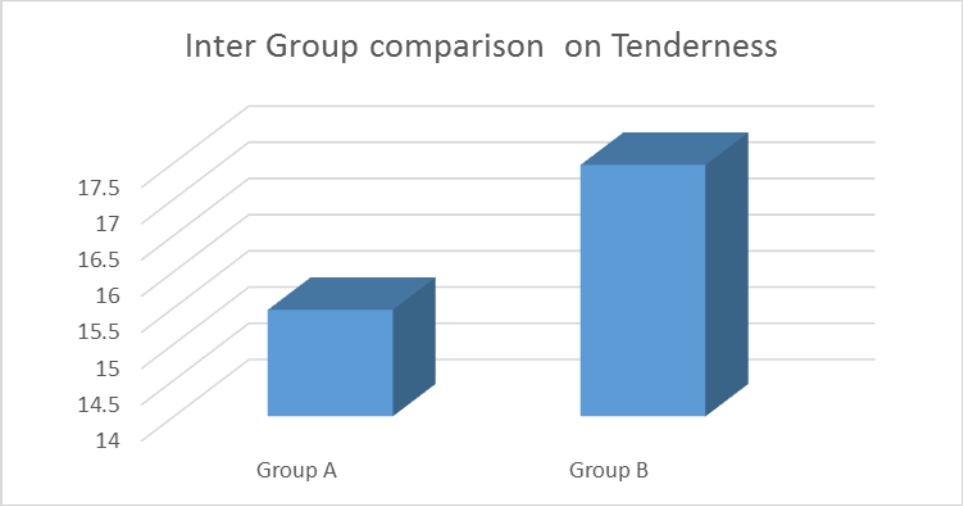
Table 3: Inter Group comparison at pain and Movements (Mann Whitney test).

Parameters	Group A	Group B	P Value	Sig
Pain(SVS)	2.47	2.57	0.9278	NS
Forward flexion	3.00	3.07	0.2936	NS
Lateral flexion (Rt.)	2.53	2.64	0.6018	NS
Lateral flexion (Lt.)	2.60	2.71	0.5378	NS
Extension	1.67	1.86	0.3914	NS
Rotation	1.67	1.85	0.6892	NS

Table 4: Inter Group comparison at Tenderness (Unpaired t test).

Parameters	Group A	Group B	P Value	Sig
Tenderness (N or kg/cm2)	15.47	17.47	0.4804	NS





a) Effect of intervention (Group-wise) on Pain

In group A, percentage improvement of therapy on pain was 92.50%, with highly significant p value of <0.0001

In group B, percentage improvement of therapy on pain was 94.83%, with highly significant p value of <0.0001

The slightly better outcome in group B in comparison to group A may be attributed to *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* Modalities against the standard treatment protocol.

On statistically analysis the inter -group comparison was found to be non significant with the p value of > 0.9278. So in other words it could be ascertained that both the protocols were found to be equally effective in terms of the outcome.

b) Effect of intervention(Group-wise) on Tenderness

- In group A, percentage improvement of therapy on Tenderness was 74.36%, with highly significant p-value i.e. <0.0001.
- In group B, percentage improvement of therapy on Tenderness was 79.15%, with highly significant p-value i.e. <0.0001.
- The slightly better outcome in group B in comparison to group A may be attributed to therapeutic effects of various constituents of *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* modalities

On statistically analysis the inter group comparison was again found to be non -significant with the p value 0.4804. So in other words it could be ascertained that both the protocols were again found to be equally effective in terms of the outcome

c) Effect of intervention(Group-wise) on Forward flexion

- In group A, percentage improvement of therapy on Forward flexion was 93.75%, with highly significant p value of <0.0001.
- In group B, percentage improvement of therapy on Forward flexion was 97.77% again with highly significant p value <0.0001.

The slightly better outcome in group B in comparison to group A may be attributed to effects of various constituents of *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* Modalities of trial intervention when compared against standard treatment protocol.

On statistically analysis the inter - group comparison was found to be non significant with the p value >0.2936.so in other words it could be ascertained that both the protocols were again found to be equally effective in terms of the outcome.

d) Effect of intervention (Group-wise) on Lateral flexion (Rt.)

- In group A, percentagewise improvement when assessed on the parameter of lateral flexion (Rt.) was 92.67%, with highly significant p-value of <0.0001.
- In group B, percentage wise improvement when assessed on the parameter of lateral flexion (Rt.) was 97.41%, with highly significant p- value of <0.0001.

The slightly better outcome in group B in comparison to group A may be attributed to therapeutic effect of *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* Modalities in comparison to that of standard protocol.

On statistically analysis the inter group comparison was found to be non significant with the p value >0.6018.so in other words it again could be ascertained that both the protocols were found to be equally effective in terms of the outcome

e) Effect of intervention (Group-wise) on Lateral flexion (Lt.)

a. In group A, percentage wise improvement when assessed on the parameter of lateral flexion (Lt.) was 92.85%, with highly significant p value of <0.0001.
b. In group B, percentage wise improvement when assessed on the parameter of lateral flexion (Lt.) was 97.13%, with highly significant p value of <0.0001.
c. The slightly better outcome in group B in comparison to group A may be again be attributed to the interventions done in the trial group in comparison to that of standard group.
d. On statistically analysis the inter group comparison was again found to be non significant with the p value of >0.5378,so in other words it could be ascertained that both the protocols were almost found to be equally effective in terms of the outcome

f) Effect of intervention (Group-wise) on Extension

a. Percentage wise improvement when assessed on the parameter of extension in group A, was 59.64%, with highly significant p value of <0.0001.
b. While percentage wise improvement when assessed on the parameter of extension in group B was 65.03 %,with highly significant p value of <0.0001.
c. The slightly better outcome in group B in comparison to group A may be attributed to effect of *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* Modalities when compared with standard protocol.

On statistically analysis the inter group comparison was again found to be non significant with the p value of > 0.3914.so in other words it could be ascertained that both the protocols were again found to be equally effective in terms of the outcome.

g) Effect of intervention (Group-wise) on Rotation

a. Percentage wise improvement when assessed on the parameter of rotation in group A was 59.64%, with highly significant p value of <0.0001.
b. Percentage wise improvement when assessed on the parameter of rotation in group B was 64.91 %, with Highly significant p value of <0.0001.
c. The slightly better outcome in group B in comparison to group A may be attributed to *VedanaSthapana Mahakashay* (Decoction), *Kati Basti &Yoga* Modalities.

On statistically analysis the inter group comparison was found to be non significant with the p value > 0.6892,so in other words it could be ascertained that both the protocols were again found to be equally effective in terms of the outcome.

Table 5: Showing overall average % relief in the assessment parameters of Acute lumbo-Sacral Sprain/Strain in Trial/control group.

S. No.	Group	Pain	Tenderness	Forward flexion	Lateral flexion (Rt.)	Lateral flexion(Lt.)	Extension	Rotation	Average Relief (in %)
1	**A**	92.50	74.36	93.75	92.67	92.85	59.64	59.64	80.77
2	**B**	94.83	79.15	97.77	97.41	97.13	65.03	64.91	85.17

Overall effect of therapy

- On inter Group comparison the difference of the outcome on assessment parameters was found to be non-significant. so in other words it could be ascertained that both the protocols were found to be equally effective in terms of the outcome when tested on various parameters as per the study design.
- Overall relief of 85.17% was observed in Group B, intervened with Cold therapy, *VedanaSthapana Mahakashay* (Decoction) *Kati Basti* with *Dashmool taila* and Yoga modalities.
- Overall relief of 80.77%, was observed in Group A, intervened with Cold therapy, Diclofenac Pottassium *50mg*, therapeutic ultrasound and proprioceptive neuromuscular facilitation (PNF).
- Group B was found to be slightly more effective in comparison to group A.

Discussion on probable mode of action of the therapies and drugs

Probable mode of Action of Cold therapy[5]

Cold therapy is used in the management of acute injury/trauma, chronic pain, muscle spasm, inflammation, and oedema and the various therapeutic outcomes of Cold therapy can be explained on the basis of its effects as;

- Decreased temperatures of skin and muscle, reduce blood flow to the cooled tissues by activating a sympathetic vaso-constrictive reflex.
- Cold therapy induced decreases in blood flow reduce oedema and slow the delivery of inflammatory mediators (e.g. leukocytes), reducing inflammation of the affected area.
- Reduces muscle pain and spasm.
- Decreased tissue temperature also reduces the metabolic demand of hypoxic tissues, potentially preventing secondary hypoxic damage in injured tissue.
- Cold therapy induces a local anesthetic effect, referred to as cold-induced neurapraxia, by decreasing the activation threshold of tissue nociceptors and the conduction velocity of nerve signals conveying pain. .
- These effects help to prevent the area from becoming stiff, reduce regional oedema by reducing

excess tissue fluid that gathers as a result of injury and inflammation.

Probable mode of Action of *VedanaSthapana Mahakashay* (Decoction)

In *Ayurveda* the probable mode of drug action can be explained on the basis of so many theories viz. *Rasa-panchaka* theory, *Pancha-bhautik* theory, *Doshik* theory and *Dhatunirman* theory. But one common factor is divulged from all these theories that the drug having pharmaco-therapeutic property, similar to the qualities of a particular *dosha*, provoke/vitiate that particular *dosha*, and the drug having pharmaco-therapeutic properties, which are opposite to the particular *dosha*, result in pacification of that particular *dosha*.

Acharya Charaka, has clearly mentioned that pain in any part of the body or in any disease, is always caused by vitiated/provoked *vata*. Acharya Shushruta and Acharya Madhav have also authenticated the same fact, in their respective texts. The disease *Kati shoola* is produced by vitiated *vata*, with *adhishthan*as *Kati Pradesh* and *dushya* as *rakta, mamsa, meda, asthi* and *trunasthi*. Both *Kati Pradesh* and *asthi* being the predominant sites of *vata*, such *dosh* (i.e. vitiated *vata*), *dushya* (i.e.*rakta,mamsa,meda,asthi/trunasthi*) *sammorchhana* is of *prakriti Samsamvet* type. In such type of *dosh dushya sammurchhana, dosh pratyanik chikitsa* is more easy and beneficial. Keeping in mind the above mentioned principle, *Vedanasthapana mahakashay dravyas* having pharmacotherapeutic propertiesas*Vata Shamaka, Shoolahara, Vedana Stapaka* properties&opposite to the qualities of *vata* so becomes more potent *vata* pacifier, so normalizes the vitiated *vata* hence alleviate pain.

Probable mode of Action of *Kati-Basti with Dashmool tail*

By employing the word '*Basti*' in the sense of 'to retain', a humble attempt is made to ascertain a new Ayurvedic principle by which an *alwal* (boundary) is made with *mash churna* in the lumbar region (*Kati-pradesh*), centering the site of Sprain/Strain and then *Dashmool taila*, at a particular temperature is retained there,for 45min daily for 5 days, with in between, change of oil, usually at the intervals of 5-7 minutes, so as to maintain the temperature upto the level of 41-45°C, or upto the maximum tolerance of the patient.

The probable mode of action of *Kati-Basti* can be explained on the basis of-

- Pharmaco-therapeutic properties of various constituents of *Dashmooltaila* and *sampraptivighatan*
- Effect of *guna*
- Therapeutic effect of heat
- Stimulation of endogenous pain inhibiting system
- Descending pain inhibiting system
- Gate control theory
- Endogenous opioid release

Mode of action of *Yoga Asana*

Yogic practices enhance muscular strength and body flexibility promote and improve respiratory and cardiovascular function, promote recovery from treatment of addiction, reduces stress, anxiety, depression and chronic pain, improve sleep pattern and enhance overall wellbeing and quality of life. Improved flexibility is one of the first and most oblivious benefits of *yoga*. With condition practice comes a gradual loosening of the muscle and connective tissues surrounding the bones and joints, this is thought to be one reason that *yoga* is associated with reduced acts and pain. *Yoga* helps to build muscle mass and maintain muscle strength which protects from condition such as Arthritis, Osteoporosis and back pain. *Yoga* also increased proprioception and improve balance. *Yoga* increases blood flow and levels of haemoglobin and red blood cells which allows to reach more oxygen to the body cells enhancing their function. Twisting poses bring out venous blood from internal organs and allowed oxygenated blood to flow in when the twist is released. Inverted poses encourage venous blood flow from the legs and pelvis back to the heart and then pumped through the lungs where it becomes freshly oxygenated. Numerous studies show that *asana* can reduce pain and disability while improving flexibility and functional mobility in people with number of conditions causing pain.

CONCLUSION

Planned treatment protocol for the management of Acute lumbo-sacral Sprain/Strain was compared with the standard treatment protocol.

Overall relief of 85.17% was observed in Group B, treated with Cold therapy, *VedanaSthapana Mahakashay* (Decoction), *Kati Basti* with *Dashmool Taila* and *Yoga* modalities.

Overall relief of 80.77%, was observed in Group A, treated with Cold therapy, Diclofenac Pottassium, Therapeutic ultrasound and proprioceptive neuromuscular facilitation (PNF).

Group B was found to be slightly more effective in comparison to group A.

On inter group comparison the difference of the outcomes on assessment parameters was found to be non-significant, Both the protocols were found to be equally effective in terms of the outcome.

No untoward effects of any intervention was reported by the patients from either group.

Therefore, it can be concluded that cold therapy, *VedanaSthapana Mahakashay* (Decoction) *Kati Basti* with *Dashmool Taila* and *Yoga* modalities (*SukshamVyayama, Janushirsasana, Trikonasana, Pavanmuktasana, Naukasana, Shalabhasana,*

Bhujangasana Ushtrasana, Shavasana.) is slightly more effective in the management of Acute lumbo-sacral sprain/strain in comparison to the standard treatment protocol & it could be a rational intervention while managing the Acute lumbo-sacral sprain/strain.

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