Clinical Researches

Clinical study on *Laksha Guggulu, Snehana, Swedana* & Traction in Osteoarthritis (Knee joint)

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Abstract

The objective of the present research was to study the efficacy of *Laksha Guggulu, Snehana, Swedana* & Traction in the management of Osteoarthritis (Knee joint). For the present work, 30 clinically diagnosed patients were selected and randomly divided into three groups. Group A treated with *Laksha Guggulu* orally, Group B treated with *snehana* & *swedana* traction, Group C treated with *Laksha Guggulu, Snehana, Swedana* & Knee Joint Traction. The various criteria worked upon were joint pain, oedema, tenderness, restriction of joint movement, stiffness, local crepitation, walking distance. Significant results were obtained on pain in joint movement, restriction in joint movement, joint stiffness , local crepitation nearly in all the groups with best result in combined group or group C.

Key words: Osteoarthritis of Knee joint, *Laksha Guggulu, Snehana, Swedana,* Traction.

Introduction

Osteoarthritis is the most common type of arthritis, especially among older people , it is a joint disease that mostly affects the cartilage. Cartilage is the slippery tissue that covers the end of bones in a joint. Healthy cartilage allows the bone to glide over one another. It also absorbs energy from the shock of physical movement. In osteoarthritis the surface layer of cartilage break down under and wears away. This allow bones under the cartilage to rub together, causing pain swelling and loss of motion of the joint. Over the time the joint may lose its normal shape. Also the bone spurs small growth called osteophytes may grow on edges of the joint . Bits of bone or cartilage can break off and float inside the joint space. This causes more pain and damage.

In *Ayurveda* the symptom of this disease are approximately similar to that of janu sandhigata vata . The complete remedy of this disease is still not available in modern medicine the drugs used are mainly -Analgesic, anti inflammatory, steroids, which cannot pacify the disease but are only symptomatic. On the other hand

furious side effect like gastritis, ulceration of mucosal layer of stomach, heart burn and vomiting are added as the unwanted results. In other words, osteoarthritis of later age is a *Jarajanya vyadhi* (disease of the ageing). In *Ayurveda, snehana, swedana, guggulu* administration in the disease could be considered relevant treatment measures. Knee traction could be helpful in maintaining the reduction of space in Osteoarthritis of knee and in the clinical recovery of the sign of crepitation.

Aims & Objectives:

1. To establish the line of treatment of Osteoarthritis of knee joint.
2. To evaluate the efficacy of *Laksha guggulu, snehana, swedana* & traction.

Material & Methods

Selection of Patients: Total 30 patients suffering from Osteoarthritis of knee joint were randomly selected from O.P.D. & I.P.D. of Panchakarma dept. of the institution, on the basis of specific peroforma prepared according to disease.

Grouping: Each group contains 10 patients.

Group A: The patients were treated with *Laksha guggulu.*

Group B: The patients were treated with *Snehana, swedana*, traction.

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Group C: The patients were treated with *Laksha guggulu, snehana, swedana* and traction.

Inclusion Criteria: Only the patients with primary OA of knee joint were included for the study.

Exclusion Criteria: Patients below 40 yrs age, and with Secondary OA of knee joint, Rheumatic arthritis, Gout, Diabetes, any other infectious diseases were excluded.

Investigations: To exclude any other pathology as well as to assess the present condtion of the patient.

Hematological Investigations: Hb%, TLC, DLC, ESR, Blood sugar, Blood urea.

Serological Investigations: RA Factor, CRP (C-Reactive Protein), ASO titre.

Radiological Investigations: X-Ray of Knee joint.

Drug: Laksha Guggulu [1]

1. *Laksha* -1part (gum).
2. *Asthisanharaka* -1 part (stem).
3. *Arjun* - 1 part (bark).
4. *Ashwagandha* -1part (root).
5. *Nagabala* -1part (whole plant).
6. *Guggulu* - 5 parts (gum).

Dose: 2 gms /b.d.
Anupana: Ushna dugdha (luke warm milk) /ushnodaka (luke warm water).

Duration: 28 days.
Follow up: 2 months after completion of treatment.

Trial Therapy

Snehana (Abhyanga): For *Abhyanga Dashamoola Taila* [2] was used on the affected joint before *swedana* for 15 minutes (28 days).

Swedana: Dashamoola kwatha was used for *swedana* as *nadi swedana* externally on the affected joints after *snehana* for 10 minutes (28 days).

Traction

Knee joint traction was given for 7 days after starting the treatment till the end of the treatment. Type of traction - skin foot traction , intermittent type (six days in a week). Duration-12-15 minutes per day for 3 weeks. Weight - 2.5 - 4 kg. Position-Supine position on the traction bed. Equipment - Thomas splint, traction bed, traction kit, pulley cord, weight, etc. Method-Thomas splint & traction kit was applied over the legend cord was tied & run over a pulley with a weight attached to it.

Criteria of Assessment

Clinical Evaluation: The improvement in the patients was assessed mainly on the basis of relief in the sign & symptoms of the disease. To assess the effect of therapy objectively, all the sign & symptoms were given scoring depending upon their severity.

Joint pain
- No pain   - 0
- Mild pain   - 1
- Moderate pain but no difficulty in walking   - 2
- Slight difficulty in walking due to pain   - 3
- Severe difficulty in walking   - 4

Oedema
- No swelling   - 0
- Slight swelling   - 1
- Moderate swelling   - 2
- Severe swelwling   - 3

Tenderness
- No tenderness   - 0
- Patient says tenderness   - 1
- Winching of face on touch   - 2
- Does not allow to touch the joint   - 3

Restriction of joint movement
- No pain in movement   - 0
- Pain without winching of face   - 1
- Pain with winching of face   - 2
- Prevents complete flexion   - 3
- Does not allow passive movement   - 4

Stiffness
- No stiffness   - 0
- Mild stiffness   - 1
- Moderate stiffness   - 2
- Severe difficulty due to stiffness   - 3
- Severe stiffness more than 10 minutes   - 4

Local crepitation
- No crepitation   - 0
- Palpable crepitation   - 1
- Audible crepitation   - 2

Walking time
- Walks without pain upto 1 km   - 0
- Walks without pain upto 500 mtr   - 1
- Walks without pain upto 250 mtr   - 2
- Feels pain on standing   - 3
- Cannot stand   - 4

Statistical Analysis: Statistically in terms of mean score (X), Standard deviation (S.D.), Standard Error (S.E.), Paired & unpaired 't' test was carried out and significance at the level of 0.1, 0.05, 0.02, 0.01, & 0.001 of p levels. The results were interpreted as:

$p > 0.05$ Non significant (N.S.)
$p < 0.05$ Significant (S.)
$p < 0.01$ Moderate Significant (Mo.S.)
$p < 0.001$ Highly Significant (H.S.)

Overall effect of Therapies

Clinical sign & symptoms, each patient was assessed on the basis of signs and symptoms of the disease. On basis of grading pattern as well as percentage relief, patients were classified as follows

Cured: 100% relief in signs and symptoms.

Marked Improvement: > 75% relief in signs and symptoms.

Moderate Improvement: 51% to 75% relief in signs and symptoms.

Mild Improvement: 25 to 50% relief in signs and symptoms.

No Improvement: Below 25% relief in signs and symptoms.

Observations & Results

Table 1: Age wise distribution of 30 patients

Age in yrs.	No. of patients			Total	%
	Group A	Group B	Group C		
41-50	03	02	00	05	16.16
51-60	05	07	01	13	43.33
61 yrs & above	01	01	09	11	36.66
Total	10	10	10	30	100.00

Table 2: Sex wise distribution of 30 patients

Sex	No. of patients			Total	%
	Group A	Group B	Group C		
Male	01	05	02	08	26.66
Female	09	05	08	22	73.33
Total	10	10	10	30	100.00

Table 3: Religion wise distribution of 30 patients

Religion	No. of patients			Total	%
	Group A	Group B	Group C		
Hindu	10	10	10	30	100.00
Muslim	00	00	00	00	00.66
Total	10	10	10	30	100.00

Table 4: Socio-economic status wise distribution of 30 patients

Socio-economic Status	No. of patients			Total	%
	Group A	Group B	Group C		
Lower Middle	08	06	07	21	70.00
Upper Middle	02	04	03	09	30.00
Total	10	10	10	30	100.00

Table 5: Type of work wise distribution of 30 patients

Type of work	No. of patients			Total	%
	Group A	Group B	Group C		
Ambulatory	10	06	10	26	86.66
Sedentary	00	04	00	04	13.33
Total	10	10	10	30	100.00

Table 6: Diet wise distribution of 30 patients

Diet	No. of patients			Total	%
	Group A	Group B	Group C		
Veg.	08	10	08	26	86.66
Non. Veg.	02	00	02	04	13.33
Total	10	10	10	30	100.00

Table 7: Effect on Joint pains

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	10	3.50	.80	2.7	75.67	0.632	0.2	14	<.001
Group B	10	2.1	0.4	1.7	80.95	0.48	0.15	11.12	<.001
Group C	10	3.4	0.4	3.0	88.24	0.94	0.29	10.06	<.001

BT=Bafore treatment, AT=After treatment, MD=Mean Difference, SD=Standard Deviation, SE=Standard Error.

Table 8: Effect on Oedema

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	9	1.67	1.0	0.67	40.12	0.87	0.29	2.31	>.05
Group B	9	1.22	0.33	0.89	72.95	0.6	0.20	4.44	<.01
Group C	5	1.0	0.2	0.8	80	0.45	0.2	4.0	<.02

Table 9: Effect on Tenderness

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	10	2.10	1.3	0.8	38.10	0.42	0.13	6.0	<.001
Group B	10	2.3	1.4	0.9	39.13	0.32	0.1	9.00	<.001
Group C	10	2.6	1.2	1.4	53.85	0.7	0.22	6.33	<.001

Table 10: Effect on Restriction in joint movement

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	10	2.l	1.2	0.9	42.86	0.32	0.1	9.0	<.001
Group B	10	1.7	0.4	1.3	76.47	0.483	0.15	8.51	<.001
Group C	10	3.5	0.4	3.1	88.57	0.73	0.23	13.28	<.001

Table 11: Effect on Stiffness

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	10	2.1	1.2	0.9	42.86	0.32	0.1	9.0	<.001
Group B	10	2.4	1.3	1.1	45.83	0.57	0.18	6.13	<.001
Group C	10	2.2	1.1	1.1	50	0.32	0.10	11	<.001

Table 12: Effect on Local crepitation

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	5	1.8	0.8	1.0	55.55	1.11	0.5	2.0	<0.1
Group B	5	2	.08	1.2	60	.447	0.2	6.0	<.01
Group C	6	1.16	0.33	0.83	71.42	0.408	0.167	5.0	<.01

Table 13: Effect on Walking distance:

Groups	n	Mean score			% Improvement	SD	SE	t value	p value
		BT	AT	MD					
Group A	10	2.9	0.9	2	68.96	0.471	0.149	13.416	<.001
Group B	10	1.7	0.6	1.1	64.71	0.316	0.1	11	<.001
Group C	10	3.1	0.4	2.7	87.09	0.94	0.3	9	<.001

Table 14: Comparison of effect of different groups by using unpaired 't' test on Joint pains

Groups	S.D	S.E	t	p
C:A	0.6749	0.3018	4.63	<.001
C:B	0.2767	0.1383	8.1315	<.001
B:A	0.623	2.786	0.646	>0.1

Table 15: Comparison of effect of different groups by using unpaired 't' test on Oedema

Groups	S.D	S.E	t	p
C:A	0.1722	0.0769	16.905	<.001
C:B	0.5627	0.2516	3.577	<.01
B:A	0.6453	0.3339	3.1296	<0.01

Table 16: Comparison of effect of different groups by using unpaired 't' test on Tenderness

Groups	S.D	S.E	t	p
C:A	0.5773	0.4409	4.157	<.01
C:B	0.711	0.3179	2.201	<.05
B:A	0.745	0.386	1.66	>0.1

Table 17: Comparison of effect of different groups by using unpaired 't' test on Restriction in joint movement

Groups	S.D	S.E	t	p
C:A	0.667	0.30	5.37	<.001
C:B	0.40	0.18	5.0	<.001
B:A	0.97	0.50	1.98	>0.05

Table 18: Comparison of effect of different groups by using unpaired 't' test on Stiffness

Groups	S.D	S.E	t	p
C:A	0.38	0.26	5.12	<.001
C:B	0.65	0.33	3.13	<.01
B:A	0.91	0.75	1.34	>0.1

Table 19: Comparison of effect of different groups by using unpaired 't' test on Local crepitation

Groups	S.D	S.E	t	p
C:A	0.17	0.07	16.90	<.001
C:B	0.51	0.22	0.89	>0.1
B:A	0.80	0.40	4.08	<0.01

Table 20: Comparison of effect of different groups by using unpaired 't' test on Walking distance

Groups	S.D	S.E	t	p
C:A	0. 7416	0.4690	3.837	<.01
C:B	0.5204	0.3679	3.44	<0.05
B:A	0.666	0.386	1.852	>0.05

Table 21: Reoccurrence of symptoms during follow up (2 months)

Follow up	No. of patients				
	Group A	Group B	Group C	Total	%
Recurrence	3	2	0	5	16.67
No recurrence	7	8	10	25	83.33

Table 22: Overall effect of therapy

Effect of Therapy	Group A		Group B		Group C	
	n	%	n	%	n	%
Cured	2	20	4	40	5	50
Marked improvement	3	30	3	30	3	30
Moderate improvement	3	30	2	20	2	20
Mild improvement	2	20	1	10	0	0
Unchanged	0	0	0	0	0	0

Discussion

Disease Entity: In modern science, Osteoarthritis (OA) is the most common arthritic condition affecting and increasing aging population. It is a slowly progressive joint disease. It is reported that age is the most powerful risk factor for OA. In a radiographic survey of women less than 45 years old, only 2% had OA, however prevalence was 30%, between the ages of 45 to 64 years, and for those older than 65 years it was 68%. In males, the figures were similar but somewhat lower in the older age groups[3]. In India these degenerative changes in joints arise from the age of 30 years in women. Osteoarthritis is a major cause of morbidity and disability, limiting activity and impaired quality of life especially among the elderly. The primary complaints of patients with Osteoarthritis are pain and difficulty in joint mobility. The etiology of pain is multi-factorial, including inflammatory and non-inflammatory causes. The disease is managed by NSAIDs, analgesic drugs, physiotherapy and corticosteroids etc. Above drugs are very costly and cause unwanted affects. Even the surgical treatment does not provide complete relief.

In *Ayurveda, Sandhivata* is given as a *Vatavyadhi* and it is also believed that any type of pain can not be without presence of *Vata. Sandhivata* is described first by *Charaka* in the name of *"Sandhigata Anila"* with symptoms of *Shotha* which on palpation feels as bag filled with air and *Shula* on *Prasarana* and *Akunchana* (pain on flexion and extension of the joints)[4]. *Sushruta* also mentioned *Shula* and *Shotha* in this disease leading to the diminution (*Hanti*) of the movement at joint involved[5]. *Madhavakara* has not explained *Shotha* but mentioned *Atopa* as a symptom of *Sandhigata Vata* [6], which may also be

taken equivalent to air filled bag. He has added one more symptom i.e. *Hanti Sandhi* (restricted flexion and extension)[7].

Thus, the disease *Sandhivata* can be defined as a joint disease with symptom of *Shula*, which aggravates by movement, *Shotha* with complete restricted movements at later stages.

Ayurvedic literature does not reveal the special etiological factor for *Sandhivata* however, the aggravative factors for *Vata* can be adopted for it, *Vata* particularly *Vyana vayu* has a close relationship with the movement of *Sandhi*, so, its aggravative factors which can be produce *Sandhivata* are as follows[8].

- *Aharaja: Ruksha - Laghu - Visthambhi - Sheeta-Katu - Tikta - Kashaya Annasevana, Sheetapana, Adhyashana, Viruddha - Asatmya - Pramita - Mithya Ahara* etc. *Viharaja: Ati Vata - Atapa sevana, Ati Plavana, - Vyayama - Vyavaya - Cheshta, Vegavidharana, Ratrijagarana, Divaswapa, Marmaghata, Abhighata* etc.
- *Manasaja: Chinta, Krodha, Shoka, Bhaya* etc.
- *Kalaja: Abhra* (cloudy season), *Aparahna* (evening), *Aparatra* (end of night), *Sheetakala* (winter), *Varsha* (rainy season) etc.

Other than these, the factors which can produce *Avarana* of *Kapha* or *Meda* and the factors which make *Dhatukshaya* also cause *Sandhivata*. *Asthi* being a prime seat of *Vata*, as well as important part of *Sandhi*. Its *Kshaya* can produce aggravation of *Vata* and *Kha-vaigunya* in *Sandhisthana*, leading to *Sandhivata*.

Rupa
1) *Sandhishula:* Pain usually increases by movements like *Akunchana, Prasarana* because of *Vata prakopa*.
2) *Sandhishotha: Vatapurna druti sparsha* type of *Shotha* has been described by all *Acharyas*. *Srotorodha* occurs due to *Vata Sanga* which is responsible for *Shotha*. Being a *Vatika* type, on palpation the swelling is felt like a bag filled with air but *Madhavakara* gave this term a new name of *Atopa*[9].
3) *Sandhihanti: Charaka* has mentioned this symptom as a painful *prasarana - akunchana Pravritti*. First *Sushruta* explained this symptom followed by *Madhavakara*. This word is explained as inability to flexion and extension. However this symptom may not be seen in early stages. When the disease aggravated the vitiated *Vata* may produce *Stambha* and there by inability of movements.
4) *Sandhisphutana: Sandhivata* is localized *Vata vyadhi* in which *prakupita Vayu* affects *Sandhi*. This *Sthanasamshraya* is a result of *srotoriktata* present at sandhi. That means *Akasha Mahabhuta* is increased at the site of *sandhi* and *Shabda* is a *guna* of *Akasha*. Hence, in the process of extension and flexion, *Shabda* is heard or palpated.

Demographic Data

Age: All the patients of this study were above 40 years of age. Maximum number of patients were belonging to 51 - 60 years (43.33%). It can be said from the observations that usually symptoms of the disease *Sandhivata* starts after 4th decade of life, which is Hani stage of *Madhya Vaya*.

Sex: In this study patients were female (73.33%) and male (26.66%). This support that Osteoarthritis of knee is more commonly found in women than man[10].

Religion: In the present clinical study, all the patients i.e. 100% were found to be of Hindu community. The religion doesn't seen to have any significant relationship with the disease *Sandhivata*. So, geographical proportion of Hindus in the city may be reason for its higher incidence in Hindu.

Socio-Economic Status: Socio-economic status of the patients of present trial showed that 30% of the patients were from upper middle class, which indicate that people of this class were taking food rich in fat and protein which lead to *Medovriddhi* and may produce *Avaranajanya* pathogenesis of *Sandhivata*, 70% patients were from lower middle class which indicates that they were not able to take even correct nutritious and hygienic diets. So, lack of nutritious food is also leads to *Dhatukshaya* and resulted in *Vata Prakopa*, as well as degeneration which further lead to causing the disease.

Type of work: The type of lifestyle of the patients indicate that 86.66% of the patients were having ambulatory type of lifestyle & 13.33% were having sedentary type of lifestyle. This support the fact that the excessive work plays an important role in the development of pathology in weight bearing joint to produce osteoarthritis.

Diet: Maximum number of patients i.e. 86.66% were taking vegetarian diet and 13.33% patients were taking mixed type of diet. This does not seen to have any important role to play as far as *Sandhivata* is concerned.

Results
Effect on Joint Pains: Statistically highly significant improvement (p<.001) in joint pains was observed in all the three groups ,while percentage gain (88.24%) in group C is highest indicating the synergistic effect of drug with *snehana, swedana* & traction.

Effect on Oedema: Statistically insignificant improvement in joint pains was observed in groups A (p>.05) ,whereas significant improvement was observed in group C (p<.02) & moderate significant improvement in group B (p<.01).

Effect on Tenderness: Statistically highly significant improvement in joint pains was observed in all the three groups (p<.001), percentage gain (53.85%) is best in group C.

Effect on Restriction in Joint Movement: Statistically

highly significant improvement in joint pains was observed in all the three groups, the percentage gain (88.57%) in group C exceeds the other two groups A & B (48.86% & 76.47).

Effect on Stiffness: Statistically highly significant improvement in joint pains was observed in all the three groups, whereas percentage gain was highest in group C (50%).

Effect on Local Crepitation: Statistically insignificant improvement in joint pains was observed in group A & more significant improvement in joint pains were observed in group B & group C, whereas percentage gain was highest in group C (71.42%).

Effect on Walking Distance: Statistically highly significant improvement in walking distance were observed in all the three groups, whereas percentage gain was highest in group C (87.09%).

Effect on Heamatological Parameter: The evalution of heamatological parameters were done for screening the exclusion & inclusion criterias & to see any side effects of drugs & treatment modalities during the trial. There were no significant changes in any groups.

Follow up: Follow up was done for 2 months after completing the therapy to see any worsening or reccurence in signs & symptoms of patients after treatment. Reccurence was seen only in 5 pts out of the total 30 pts with no reccurence in group C.

Overall Result: In group A the results were highly significant in sign & symptoms except in oedema & crepitations where the results were insignificant, whereas in group B results were highly significant in sign & symptoms except oedema & crepitations where the results were more significant. In group C the result were highly significant in sign & symptoms except in oedema where the results were significant & moderately significant results in crepitations.

Joint pain, Tenderness, Restriction of joint movement, Stiffness & Walking distance were considered for comparing the overall result among the groups because these were present in all the 30 pts. These show that group C is the best, group B is better than group A in bringing overall clinical recovery of patients.

Comparison of three groups by unpaired 't' test: For comparison of the better group unpaired 't' test was done , which shows that group C was either more significant or highly significant in all the sign & symptoms than group A &B except in local crepitations where group C was not significant than group B. Thus it can be concluded that group C was better than group A & B. Group B was better in treating oedema & crepitations than group A due to more significant results. Group B & C are equally competent in treating the crepitations. In walking distance the improvement was best in group C.

In combined group or group C best relief & better significant results were seen in maximum signs & symptoms of disease which were taken in present trial. Also it was seen in trial that group B was better in treating oedema & crepitations than group A due to more significant results. According to significance, group B & C were equally competent in treating the crepitations but more relief was seen in group C. In walking distance the improvement was best in group C.

Laksha guggulu, snehana, swedana & traction in combination provided better relief in the amelioration of signs and symptoms. As a matter of fact, either of these therapies did not appear to be solely responsible for the end result. Therefore combined effect of these therapies-was responsible in bringing overall clinical recovery of patients.

Drugs & Procedures: For the present study 30 clinically diagnosed patients were selected & randomly divided into three groups. And all the patients were advised dietary restriction as per *Ayurvedic* texts. The content of *Laksha guggulu* include purified *guggulu, Laksha, Asthisanharaka, Arjun, Ashwagandha* and *Nagabala*. Most of these drugs have properties like.- *Vatakaphanashaka, deepana, balya, rasayana, tridoshanashaka, pachana, shothaghna, vedanashamaka* & *shoolaprashamaka*. A compound preparation having these properties is likely to check the etiopathogenesis of the disease *Sandhigata Vata* and arrest its progress.

Similarly *snehana* and *swedana* with *Dashamoola taila* and *Dashamoola kwatha* together bring about *vatashamaka, balya, anulomaka, deepana & pachana* effect in the body and may help to check the progress of the disease in *Sandhigata vata*. The probable mode of action of traction could be that it increase the joint space temporarily and increases movement & flexibility of the joints. Muscle, ligament & tendon strengthening and pain is relieved because of the bony fragment is separated.

On the clinical evaluation it was observed that the total effect of the therapies was mild, moderate & maximum in group A, group B & group C respectively. As the matter of fact no single mechanism appear to be solely responsible. Combined effect of *Laksha Guggulu, Snehana, Swedana* & Traction was responsible in bringing overall clinical recovery of patients. The relief in clinical manifestation notably leads to functional recovery and the patient becomes functionally more competent. All the patients tolerated medicine & treatment modalities well and side or toxic effects of these were not noticed in any of the patients.

Conclusion

1. *Laksha guggulu* was an effective remedy in uncomplicated & new cases of OA.

2. *Snehana, swedana* & traction therapy showed much better result than oral therapy.
3. Best response was noticed when *Laksha guggulu, snehana, swedana* & traction was administerd.

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हिन्दी सारांश

लाक्षा गुगुलु, स्नेहन, स्वेदन एवं ट्रेक्शन का जानुसन्धिगतवात पर अध्ययन

क्षिप्रा राजोरिया, सर्वेश कुमार सिंह, आर. एस. शर्मा एवं एस. एन. शर्मा

प्रस्तुत शोधकार्य में जानुसन्धिगत वात के ३० रोगियों का चयन कर उन्हें ३ समूह में विभक्त किया गया है । समूह 'अ' को लाक्षा गुगुलु ५०० मि.ग्राम की ४ वटी दिन में दो बार दुग्ध अथवा जल के अनुपान से दी गयी है । तथा समूह 'ब' में स्नेहन, स्वेदन एवं ट्रेक्शन द्वारा उपचारित किया गया है एवं समूह 'क' में लाक्षा गुगुलु, स्नेहन, स्वेदन एवं ट्रेक्शन का प्रयोग किया गया है । सभी समूहों में उपचार की अवधि ४ सप्ताह रखी गयी । सन्धिशूल, जड़ता, शोथ स्पर्शासह्यता, सन्धिशब्दता, प्रसारण आकुंचन में अवरोध, चलन दूरीता (Walking Distance) लक्षण पर परिणाम का आंकलन किया गया है। सांख्यकीय आंकलन से यह ज्ञात हुआ है कि सभी समूह में सन्धिशूल, जड़ता, सन्धिशब्दता, प्रसारण आकुंचन में अवरोध, चलन दूरीता लक्षणों पर अच्छे परिणाम प्राप्त हुए हैं ।