

**Original Research Article****Herbal Treatment of Osteoarthritis: A Hospital Based Clinical Study**

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Email: srisankar007@gmail.com, Phone: 9700770255**Abstract****Objective:** To study the treatment of *Cissu squadrangularis* Linn and *Zingiber officinalis* Rosc on osteoarthritis patients in south India**Methods:** 60 osteoarthritis patients were selected and divided into group A, B and C (each group consist of 20 patients); data were collected before and after treatment of following groups: Group A–*Cissus quadrangularis* linn-5gm, Group B-*Zingiber officinale* rosc-5gm. Group C - Treatment of *Cissus quadrangularis* linn +*Zingiber officinale* rosc-5 gm/dose, all groups twice a day, orally with luke warm water.**Results:** cracking pain in joints was reduced after treatment of group 'B', 'C' 70% and group 'A' only 25% cases were relief from the symptom. Group 'B', 'C' ($p < 0.001$), A ($p < 0.0001$) were statistically significant. 90 % of cases were relieved stiffness of joint at the end of treatment in group 'B' while 'A' 35%, 'C' 45%, 'A', 'C' shows statistically very significant ($p < 0.001$) and group 'B' was extremely significant ($p < 0.0001$). Group A, B and C showed 15%, 70% and 75% relief from the complaint of joint pain while moving at the end of treatment. Statistically extremely significant in joint pain while moving ($p < 0.0001$).**Conclusion:** Present study significant reduction of cracking pain in joints after treatment of *Zingiber officinalis* rosc or *Cissus quadrangularis* linn + *Zingiber officinale* rosc, Stiffness of joint relieved after treatment of *Zingiber officinale* rosc. Reduced Joint pain while moving after treatment with combination therapy of *Cissus quadrangularis* Linn. + *Zingiber officinalis* Rosc.**Key Words:** Osteoarthritis, Ayurvedic treatment.**INTRODUCTION**

During last three decades research on Indian medicinal plants picked up momentum as the developed countries are evincing keen interests on safe and effective plant medication for refractory conditions like Arthritis, Diabetes, Asthma,

Hypertension and Obesity etc. Osteoarthritis is the most common articular disorder begins asymptotically in the 2nd and 3rd decades and is extremely common by the age of 70. Osteoarthritis generally due to intrinsic changes of the joints such as reduced knee flexibility, joint effusion,

deformities, and loss of function. It leading musculoskeletal cause of disability especially in elderly persons all over the world^{1,2}. Most of the persons suffer from some pathological change in the weight bearing joint from the age of 40. It is estimated that approximately 4 persons out of 100 are affected with osteoarthritis. India have incidence of osteoarthritis as high as 12%. Nearly 70 percent of people over the age of 70 have X-ray evidence of the disease, but only half of these people ever develop symptoms. The osteoarthritis increases with age and is higher in women than in men, but aetiology of osteoarthritis till unclear³, but it is commonly associated with micro traumas, knee surgery, metabolic or endocrinal factors, heredity, obesity and joint overload^{4, 5, 6}. Current clinical guidelines recommend non-pharmacological strategies as the first line management of osteoarthritis symptoms but no permanent curement^{5,7}. The present ayurvedic study to fulfil the identification of treatment of osteoarthritis without side effects.

METHODOLOGY

The clinical study was carried out in total 60 patients in Department of Dravyaguna, S.V Ayurvedic Medical College, Tirupathi with treatment of *Cissus quadrangularis* linn powder and *Zingiber officinale* rocs powder in osteoarthritis patients. Study was conducted after obtain the institutional ethical committee approval in the period of June 2015 to June 2016. The total patients were divided

in to 3 groups (Groups-A, B, C), each group consists of 20 patients and data were collected before and after treatment with tested drugs. Three follow-ups were done at interval of 15 days.

Treatment Groups:

Group A– Treatment of *Cissus quadrangularis* linn 5 gm/dose twice a day.

Group B -Treatment of *Zingiber officinale* rosc.5 gm/dose twice a day.

Group C - Treatment of *Cissus quadrangularis* linn +*Zingiber officinale* rosc.5 gm/dose twice a day with luke warm water.

Inclusion criteria

- Patient's age group of 31-70 years was selected.
- Patient with osteoporosis & osteophytic changes.
- Obese patients.
- Patients with history of Trauma.
- Patients with Endocrine disorders mainly menopausal women.

Exclusive criteria:

- Patients age below 31 and above 70 years
- Patients suffering from Carcinoma and psoriatic arthritis.
- Patients suffering from Ankylosing arthritis.
- Patients suffering from Poliomyalgia and Rheumatoid arthritis.
- Patients suffering from Tuberculosis.
- Patients suffering from Syphilitic arthritis.

RESULTS

Table-1: Showing distribution of patients having cracking pain in joints before and after treatment in all groups

Cracking pain in joints	Score	Before Treatment (BT)		After Treatment(AT)	
		No. of Patients	%	No.	%
Group A	0	2	10%	5	25%
	1	12	60%	13	65%
	2	6	30%	2	10%
Group B	0	4	20%	14	70%
	1	11	55%	5	25%
	2	5	25%	1	5%
Group C	0	2	10%	14	70%
	1	15	75%	6	30%
	2	3	15%	0	0%

Score; 0-Normal, 1- mild, 2- moderate, 3- severe

Table-1. Shows that symptom of cracking pain in joints was reduced in group A, B and C respectively. In group 'B' & 'C' 70% cases were

relieved from the complaint while in group 'A' showed 25% cases were relief from the symptom. Improvement in group 'B' and group 'C' is same.

Table -2: Showing improvement in cracking pain in joints in three groups:

Cracking pain in joints	BT Mean±S.D.	AT Mean ± S.D.	Within the group Paired' t' test value BT-AT	Mean difference	Between the group comparison one way Annova F value
Group A	1.200±0.6156	0.8500±0.5871	t = 3.199 p =0.0024	0.3500±0.4702	F = 6.095 P = 0.0040 Very significant
Group B	1.05±0.6863	0.35±0.5871	t = 4.765 p <0.0001	0.7000±0.6569	
Group C	1.05±0.5104	0.3±0.4702	t = 5.252 p <0.0001	0.7500±0.6387	

Above Table-2. Showed reduction in cracking pain in joints in all three groups which is extremely significant in groups 'B', 'C' (p<0.001) and very significant in group A (p<0.0001). Initial mean and SD reduced from 1.05 ± 0.6863 to 0.35 ± 0.5871 after three months treatment regimen in group 'B'. Decrease in initial mean and SD was

from 1.05 ± 0.5104 to 0.300 ± 0.4702 in group 'C'. In group 'A' initial mean and SD 1.200 ± 0.6156 declined to 0.8500 ± 0.5871 after taking 3 months therapy. Above data states that intergroup comparison was observed statistically very significant (p<0.001).

Table-3: Showing distribution of patients having stiffness of joint before and after treatment in all groups:

Stiffness of joint	Score	Before Treatment (BT)		After Treatment(AT)	
		No. of Patients	%	No.	%
Group A	0	4	20%	7	35%
	1	10	50%	12	60%
	2	6	30%	1	5%
	3	0	0%	0	0%
Group B	0	9	40%	18	90%
	1	7	30%	2	10%
	2	4	30%	0	0%
	3	0	0%	0	0%
Group C	0	5	25%	9	45%
	1	10	50%	8	40%
	2	5	25%	3	15%
	3	0	0%	0	0%

Score; 0-Normal, 1- mild, 2- moderate, 3- severe

Above table-3 shows marked reduction in stiffness of joint in all groups. 90 % cases of stiffness of joint were relieved at the end of treatment in group 'B'. In group 'A' and 'C', 35% and 45% cases were relieved from the complaint after treatment.

Table-4: Showing improvement of stiffness of joint in three groups:

Stiffness of joint	BT Mean±S.D.	AT Mean±S.D.	Within the group Paired' t' test value BT-AT	Mean difference	Between the group comparison oneway Anova F value
Group A	1.100±0.7182	0.7000±0.5712	t = 3.559 p=0.0010	0.4000±0.5026	F = 7.516
Group B	0.75±0.7864	0.1000±0.3078	t = 3.901 p = 0.0005	0.6500±0.7452	P = 0.0013
Group C	1.000±0.7255	0.7000±0.7327	t =2.854 p = 0.0051	0.3000±0.4702	Very significant

It is evident from the above data table that mean ± SD before treatment and after treatment 1.100 ± 0.7182, 0.7000 ± 0.5712 in group 'A'. In group 'C' it was 1.000 ± 0.7255 and 0.7000 ± 0.7327. Both Group 'A' and Group 'C' shows statistically very significant (p<0.001). The mean difference of stiffness of joint before treatment and after

treatment in group 'B' was 0.6500 ± 0.7452 which is extremely significant (p<0.0001). The statistical difference within the group is significant in all three groups. The difference of improvement in stiffness of joint is statistically very significant when compared between groups (p<001) (Table-4)

Table-5: Showing distribution of patients having joint pain while moving before and after treatment in all groups:

Joint Pain while moving	Score	Before Treatment (BT)		After Treatment(AT)	
		No. of Patients	%	No.	%
Group A	0	1	5%	3	15%
	1	9	45%	12	60%
	2	8	40%	4	20%
	3	2	10%	1	5%
Group B	0	4	20%	14	70%
	1	10	50%	6	30%
	2	5	25%	0	0%
	3	1	5%	0	0%
Group C	0	5	25%	15	75%
	1	11	55%	5	25%
	2	4	20%	0	0%
	3	0	0%	0	0%

Score: 0-Normal, 1- mild, 2- moderate, 3- severe

Above table-5 show that symptom of pain in joint while moving declines in after treatment in all groups. Group A, B and C showed 15%, 70% and 75% relief from the complaint of pain in joint

while moving at the end of treatment respectively. It was observed that improvement was more profound in group 'C' than group 'A'.

Table-6: Showing improvement of joint pain while moving in three groups:

Joint Pain while moving	BT Mean±S.D.	AT Mean±S.D.	Within the group Paired' t' test value BT-AT	Mean difference	Between the group comparison oneway Anova F value
Group A	1.550± 0.7592	1.150±0.7452	t = 2.990 p = 0.0038	0.4000±0.5982	F = 15.765
Group B	1.15±0.8127	0.3±0.4702	t = 5.101 p <0.0001	0.8500±0.7452	P <0.0001
Group C	0.95±0.6863	0.25±0.4443	t = 6.658 p <0.0001	0.7000±0.4702	extremely significant

It is evident from the above table that mean \pm SD before treatment and after treatment was 1.15 ± 0.8127 , 0.3 ± 0.4702 in groups 'B'. In group 'C' it was 0.95 ± 0.6863 and 0.25 ± 0.4443 which is extremely significant ($p < 0.0001$). The mean difference of pain in joint while moving before treatment and after treatment in group 'A' was (1.550 ± 0.7592 and 1.150 ± 0.7452) 0.4000 ± 0.5982 which is very significant ($p < 0.001$). The difference in improvement after treatment between the groups, it was statistically extremely significant ($p < 0.0001$). (Table-6)

DISCUSSION

Osteoarthritis present trends in clinically with joint pain, swelling, stiffness, and loss of mobility, which increase in severity with disease progression⁸ Non-pharmacological treatments can reduce joint load, regular aerobic, muscle strengthening and range of motion exercises, body weight at lower levels, knee brace, medial taping of patella, wedged soles, patient education etc.⁹⁻

¹¹Pharmacological treatment includes topical and systemic use of nonsteroidal drugs like cyclooxygenase-2 inhibitors, opioids and intra-articular steroids.¹²but these drugs only for symptomatic relief, disease modifying agents also playing important role in osteoarthritis that can aid cartilage repair and interleukin-1 β (IL-1 β) plays a key role in inflammation, cartilage damage, chondrocyte apoptosis and bone remodelling in osteoarthritis¹³. Ayurvedic medicines are traditionally known to be safe; "Ayurveda is natural and safe" and "modern medicine is harmful" are deeply embedded perceptions. Modern medicine used strongly in emergency clinical situations. In some of the states in India especially In Kerala, patients with emergency in case of poisonous snake bite are often first evaluated by Ayurvedic physicians who may even decide not to refer them any further (personal communication). The tremendous safety of Ayurvedic foundation of the much advocated "reverse pharmacology"¹⁴ Several publications support purported anti-inflammatory and biologic

effects of some popular anti-arthritic Ayurvedic medicinal plants^{15,16} in the view of Ayurvedic treatment present study reveals that, the significant reduction of cracking pain in joints after treatment of *Zingiber officinale* rocs or *Cissus quadrangularis* Linn combined with *Zingiber officinale* rocs, Stiffness of joint relieved after treatment of *Zingiber officinale* rocs. Reduced Joint pain while moving after treatment with combination therapy of *Cissus quadrangularis* Linn + *Zingiber officinalis* rosc.

CONCLUSION

Present study significantly reduction of cracking pain in joints after treatment of *Zingiber officinale* rocs and *Cissus quadrangularis* linn+ *Zingiber officinale* rocs, Stiffness of joint relieved after treatment of *Zingiber officinale* rocs. Highly significant reduction of Joint pain while moving after treatment with combination therapy of *Cissus quadrangularis* Linn. + *Zingiber officinalis* Rosc.

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