

EFFICACY OF FOLKLORE PLANT *KHANDUCHAKKA (EHRETIA LAEVIS ROXB)* *PATRA SIDDHA TAIL IN SANDHIVATA*

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ABSTRACT

Ayurveda the science of life though has its own principles, is incorporating new theories and drugs in it and presenting them according to its principles. Folklore Medicines, as the major remedy in traditional medical systems, have been used in medical practice form thousands of years and have made a great contribution in maintaining human health. In this study “Efficacy of Folklore plant *Khanduchakka (Ehretia laevis Roxb.) Patra Siddha Tail in Sandhivata*” assumes significance due to absence of any planned study on the folklore drug, which is widely practiced in certain parts of Maharashtra state for the treatment of Osteoarthritis. One such folk tribal herbal drug not mentioned in standard Ayurvedic text, was found to be very effective in Osteoarthritis. Aim of study is “Efficacy of Folklore Plant *Khanduchakka (Ehretia laevis Roxb.) Patra Siddha Tail in Sandhivata*” and Objectives are to study the plant *Khanduchakka (Ehretia laevis Roxb.)* for its proper botanical identification. To evaluate the effect of *Khanduchakka patra siddha tail* in the management of *sandhivata* (Osteoarthritis). It was an interventional study. A single blind randomized clinical study has been carried out on patients. In the clinical study, total 60 patient shows fulfilled diagnostic criteria of *sandhivata* were treated into two Groups. The selected patients were randomly divided into two groups; group-A and group-B. It can be concluded that local application of *khanduchakka* oil with *yograj guggul* shown significant improvement in pain, tenderness, stiffness, ROM and WOMAC scale than only intervention of *yograj guggul*. Hence it can be concluded that *Khanduchakka* oil possesses significant effect on the cardinal symptoms of *Sandhivata*.

Keywords: *Khanduchakka (Ehretia laevis Roxb.)*, Folklore Plant, *Patra Siddha Tail*, *Sandhivata*.

INTRODUCTION

Ayurveda, the science of life, though has its own principles, is incorporating new theories and drugs in it and presenting them according to its principles. Folklore Medicines, as the major remedy in traditional medical systems, have been used in medical practice form thousands of years and have made a great contribution in maintaining human health¹.

A majority of the world's population in developing countries like India still depend on herbal medicines to meet its health needs². India perhaps is the most unique country endowed with the richest traditions of tribal or folklore medicine. These medicines are used by the traditional practitioners for various ailments like Fracture, Arthritis, Hyperlipidemia, Hypertension, Kidney disorder Diabetics, Liver disorders etc. with therapeutic benefits. Scientific validation of these claims is required for wider application of the herb in therapeutic practice³.

The present study "Efficacy of Folklore plant *Khanduchakka* (*Ehretia laevis* Roxb.) Patra Siddha Tail in *Sandhivata*" assumes significance due to absence of any planned study on the folklore drug, which is widely practiced in certain parts of Maharashtra state specially in Vidharbha region for the treatment of Osteoarthritis. This plant is commonly used in Wardha district for fractures, *sandhivata* and wound healing by rural population. Local name of this plant is *Khanduchakka*. People from Wardha District are using *Kalka* or *Kalka* mixed with oil of this plant since many years. It was routinely employed by rural people for *Sandhivata* management, with surprising output. This folk tribal herbal drug not mentioned in standard Ayurvedic text, was found to be very effective in Osteoarthritis

According to modern literature, Osteoarthritis is most common type of arthritis affecting the elderly people. It is a slowly progressive joint disease and a major cause of disability, limiting activity and impaired quality of life especially in elderly people⁴. It is reported that these degenerative changes in joints arise from the age of 30 years & by the age of 65years, 80% of people may have radiographic evidence of osteoarthritis although only 25% may have symptoms⁵.

Prolonged and apparently uneventful use of an herbal medicine may offer testimony of its safety and efficacy. The research approaches should differentiate between herbal medicines which have documented experience from a long period of use with those herbs whose traditional use has not been established⁶. Folk medicine lacks a modern scientific basis. It is important that modern scientific studies be done on these medicinal plants so that the plants may be used as remedies in a more rational and scientific manner⁷.

Today in the management of osteoarthritis people are commonly using long term NSAIDs COX-2 inhibitors, opioid analgesics, topical NSAIDs, intra-articular glucocorticoids. These drugs are expensive as well as having symptomatic relief but typically short lived. The present study was under taken to evaluate the science behind such wonderful herb, to prove its properties on scientific ground, to provide cheap and safe option for *Sandhivata*, to effectively adopt the therapeutic uses of this plant and to help needy patients. Also it would be one of the best options of crop cultivation to farmer for financial support.

Aim

“Efficacy of Folklore Plant *Khanduchakka* (*Ehretia laevis* Roxb.) Patra Siddha Tail in *Sandhivata*”

Objectives

1. To study the plant *Khanduchakka* (*Ehretia laevis* Roxb.) for its proper botanical identification.
2. To evaluate the effect of *Khanduchakka patra siddha tail* in the management of *sandhivata* (Osteoarthritis).

Materials and Methods

Collection of Plant sample

Fresh matured plant sample of *Khanduchakka* (*Ehretia laevis* Roxb.) having flowering and fruiting was collected from its natural habitat of Dhaga forest in Wardha District.

Identification and Authentication of Plant

The drug was identified and authenticated as *Ehretia laevis* Roxb. from FRLHT (Foundation of Revitalization of local Health traditions, Bangalore) as SpecimenNo-FRLH119707



Khanduchakka plant

Preparation of Medicine

Material

- 1) Fresh leaves of *khanduchakka* plant
- 2) *Khanduchakka patra kalka* and *kwath*
- 3) *Til taila*

Siddha tail

Khanduchakka oil was made by *Snehapakalpana*⁸.



Khanduchakka Oil

Methodology

Study design

It was an interventional study. A single blind randomized clinical study has been carried out on patients selected from OPD & IPD of *Kaychikitsa* department, MGACH & RC by considering inclusion and exclusion criteria.

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Inclusion criteria

- 1) Only knee joint osteoarthritis patient.
- 2) Patient in 30 to 65 year age group of either sex.

Exclusion criteria

- 1) Patient with rheumatic arthritis, tubercular arthritis, infective arthritis, syphilitic arthritis, gout, traumatic arthritis, and gonorrhoeal arthritis.
- 2) Patient with any systemic illness (Hepatic failure, renal failure, ischemic heart disease and malignancy) and structural deformities.
- 3) Patient with uncontrolled diabetes.
- 4) Pregnant and lactating women.

Assessment criteria

Table 1:

Sr. No.	Symptom	Grade
Sandhishula (Pain)		
A	No pain	0
B	Mild pain	1
C	Moderate pain but no difficulty in walking	2
D	Severe pain and difficulty in walking	3
SparshaAsahyata (Tenderness)		
A	No tenderness	0
B	Patient feels tenderness	1
C	Winching of face on touch	2
D	Does not allow to touch the joint	3
Sandhigraha (Stiffness)		
A	No stiffness	0
B	Mild stiffness	1
C	Moderate stiffness	2
D	Severe stiffness	3
Sandhishotha (Swelling)		
A	No swelling	0
B	Mild swelling	1
C	Moderate swelling	2
D	Severe swelling	3
Sandhisphutana (Crepitus)		
A	No crepitus	0
B	Palpable crepitus	1
C	Audible crepitus	2
Restriction of movement (ROM)		
A	Absence of movement restriction.	0
B	Restriction of movement <25%	1
C	Restriction of movement 25% - 50%	2
D	Restriction of movement > 50%	3

Interventions:

60 clinically diagnosed patients of knee joint osteoarthritis. Patients were equally and randomly divided into two groups.

Group A (control group) - 30 patients.

Group B (Experimental group) - 30 patients.

Drug and Doses:

Group A:

1. Tab *Yogaraj guggul* 500 mg 1 tab twice a day.

Group B:

1. Tab *Yogaraj guggul* 500 mg 1 tab twice a day.

2. *Khandu chakka patra siddha tail*(oil) for external application twice a day for 30 days.

Duration of study:

30 days.

Follow up: 7th days, 15th days and 30th days.

Observations and results

Table 2: Status wise distribution of 60 patients of *Sandhivata*

Status	Number of patients		Total
	Group A	Group B	
Completed	30	30	60
Discontinued	4	3	7
Total	30	30	60

Age wise distribution of 60 patients of *Sandhivata*.

Age	Number of patients		Total	%
	Group A	Group B		
30 – 40	03	06	09	15
41 – 50	11	10	21	35
51 – 60	13	07	20	33.33
61 – 65	03	07	10	16.66

Sex wise distribution of 60 patients of *Sandhivata*

Sex	Number of patients		Total	%
	Group A	Group B		
Male	11	16	27	45
Female	19	14	33	55

Religion wise distribution of 60 patients. of *Sandhivata*

Religion	Number of patients		Total	%
	Group A	Group B		
Hindu	25	27	52	86.66
Buddhist	05	03	08	13.33

Marital Status wise distribution of 60 patients of *Sandhivata*

Marital Status	Number of patients		Total	%
	Group A	Group B		
Married	30	29	59	98.33
Unmarried	00	01	01	01.66

Education wise distribution of 60 patients of *Sandhivata*

Education	Number of patients		Total	%
	Group A	Group B		
Illiterate	10	05	15	25
Primary	01	02	03	05
Matriculation	02	07	09	15
Higher secondary	07	04	11	18.33
Graduate	09	11	20	33.33
Post graduate	01	01	02	03.33

Occupation wise distribution of 60 patients of *Sandhivata*

Occupation	Number of patients		Total	%
	Group A	Group B		
Housewife	12	14	26	43.33
Labor	00	03	03	05
Business	02	02	04	06.66
Service	04	04	08	13.33
Farmer	12	07	19	31.66

Habitat wise distribution of 60 patients of *Sandhivata*

Habitat	Number of patients		Total	%
	Group A	Group B		
Urban	07	10	17	28.33
Rural	23	20	43	71.00

Table 3: Comparisons between Group A and Group B on the bases of Pain

Pain	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	2	1	-4.735 ^a	0.000	38.8	Significant
Group B	2	1	-4.939 ^a	0.000	59.7	Significant

Graph 1: Comparisons between Group A and Group B on the bases of Pain

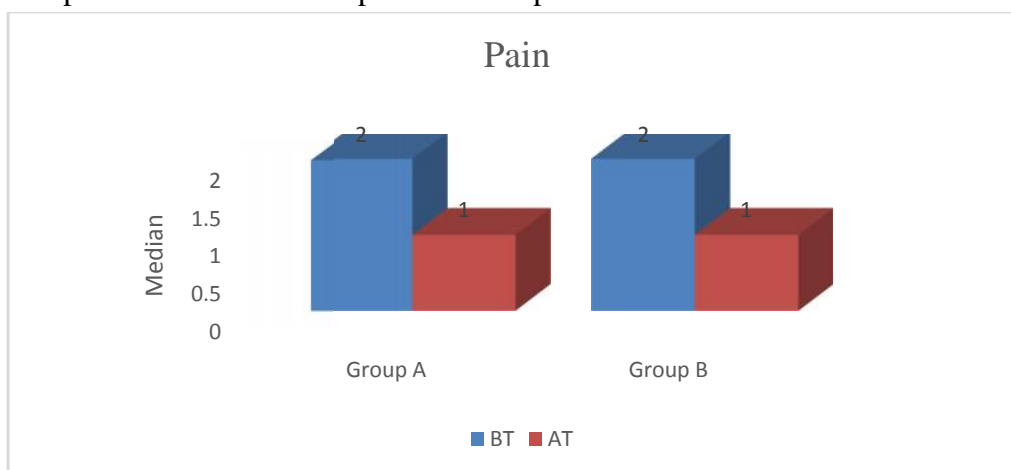


Table 4: Comparison between Group A and Group B on the bases of Tenderness

Tenderness	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1.5	1	-4.243 ^a	0.000	39.1	Significant
Group B	1.5	0	-4.725 ^a	0.000	69.6	Significant

Graph 2: Comparison between Group A and Group B on the bases of Tenderness.

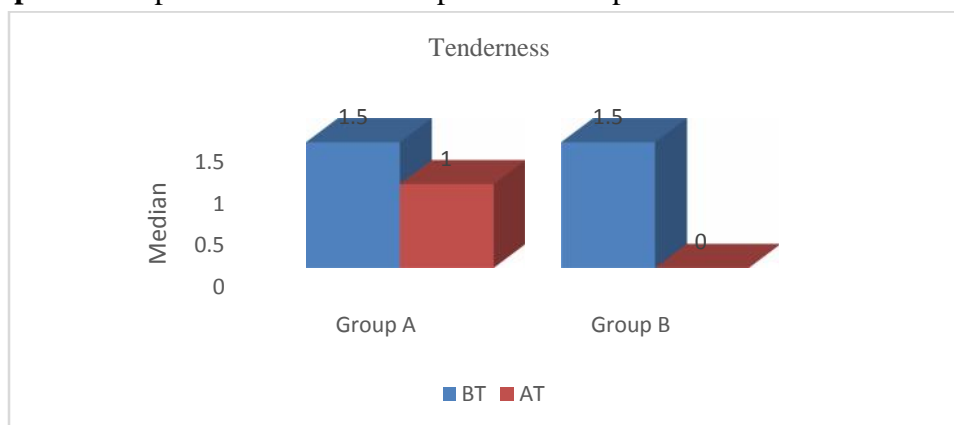


Table 5: Comparison between Group A and Group B on the bases of Stiffness

Stiffness	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1	1	-4.123 ^a	0.000	40.5	Significant
Group B	1.5	0	-4.388 ^a	0.000	68.2	Significant

Graph 3: Comparison between Group A and Group B on the bases of Stiffness

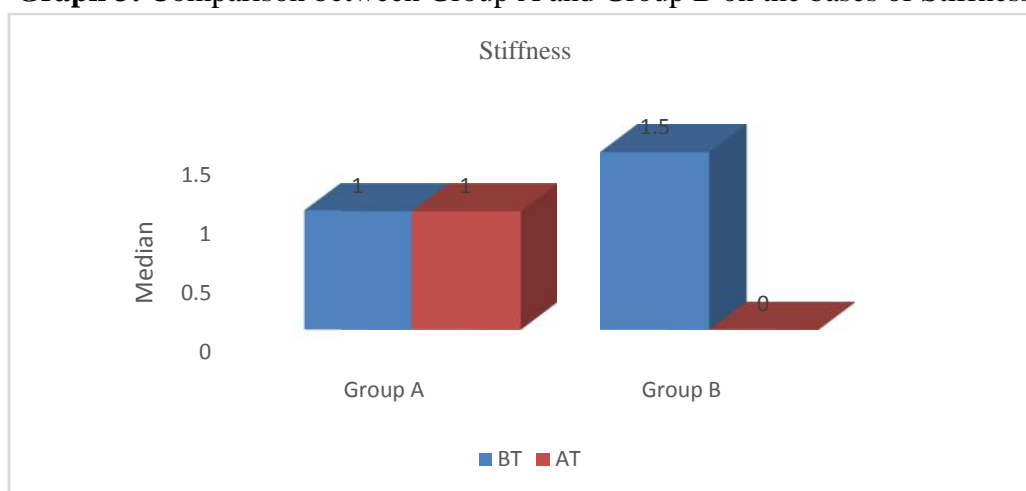


Table 6: Comparison between Group A and Group B on the bases of ROM

ROM	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0	0	-1.000 ^a	0.317	20.0	NS
Group B	0	0	-2.449 ^a	0.014	75.0	Significant

Graph 4: Comparison between Group A and Group B on the bases of ROM

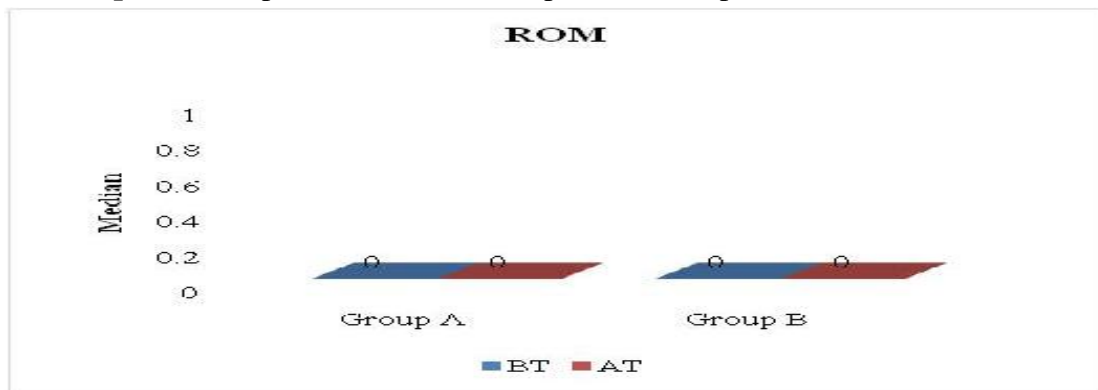


Table 7: Comparison between Group A and Group B on the bases of WOMAC Scale

WOMAC Scale	Mean		t-Value	P-Value	% Effect	Result
	BT	AT				
Group A	28.12	17.91	11.481	0.000	32.5	Significant
Group B	31.16	9.195	8.867	0.000	66.5	Significant

Graph 5: Comparison between Group A and Group B on the bases of WOMAC Scale

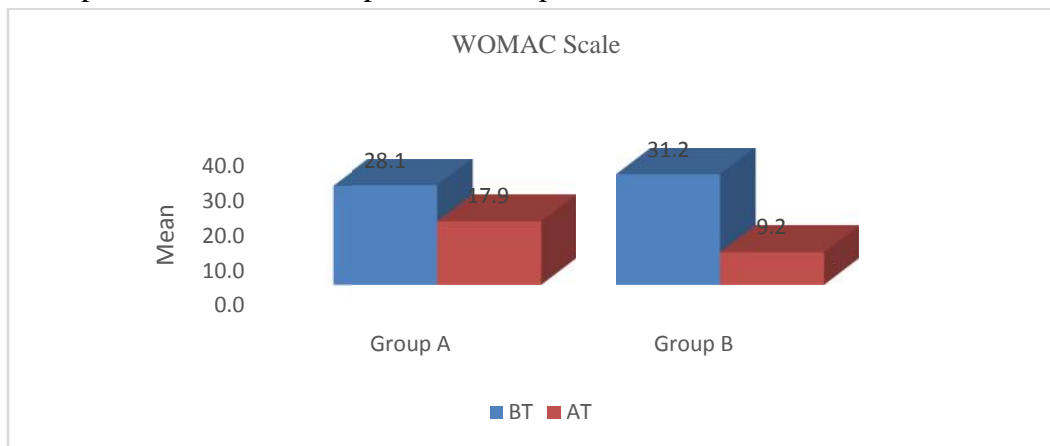


Table 8: Comparison of WOMAC index (t-test)

Group	N	Mean Diff	SD	SE	t-Value	P-Value
Group A	30	9.6	4.59	0.84	-5.170	0.000
Group B	30	24.6	15.19	2.77		

For comparison of WOMAC index, we have used unpaired t-test. From above test we can observe that P-Value is less than 0.05 hence we can conclude that there is significant between Group A and Group B. Further we can observe that Effect observed in Group B is more than Group A.

DISCUSSION

In the clinical study, total 60 patient shows fulfilled diagnostic criteria of *sandhivata* were treated into two Groups. The selected patients were randomly divided into two groups; group-A and group-B.

Interpretation on Observations and Results:

Majority of the patients (35%) were reported in the age group of 41-50 years followed by 33.33% in the age group of 51-60 years. Demographic studies revealed that osteoarthritic changes commence between 4th-5th decades of life *Sandhivata* is the disease of *vriddhavastha* due to *dhatukshya* which has been found here also. Majority of the patients were female (55%) followed by male (45%). Women affect more than men. This shows the prevalence of the disease in females as mentioned in texts. The post menopausal hormonal variations play a role in bone mineralization.

Education wise, maximum patients (33.33%) had education up to the graduate level followed by 26.19% patients were illiterate. There is no existing relationship between education and *Sandhivata*, Maximum number of patients found educated and socio-economically belonged to middleclass due to the dominance in the population, where the study was conducted.

Occupation wise, maximum patients were housewives (43.33%). Reasons behind this may be that while performing domestic works, they have to stand for a long period and have to lift weights and also negligence of own care. The occupation has great impact on *sandhivata*. Also involvement of particular joints is dependent on occupation. The joint which used more for the work on which repetitive stress is present, these joints are more prone for osteoarthritis.

Effect of Therapy:

In clinical study, all the cardinal signs and symptoms were given scoring according to their severity as mentioned in the material

and methods. Visual analogous scale (VAS) and WOMAC scale was performed before and after the treatment to assess the effect of therapy.

Pain

We can observe that P-Values for Group A and Group B are less than 0.05 hence we can conclude that effect of therapy observed in both groups are significant. This improvement may be due to effect of drug accordingly it possesses *vata shamaka* properties, increases *dhatu-agni* by its *kashay-tikta rasa* leading to proper nutrition of the *dhatu*.

Tenderness

We can observe that P-Values for Group A and Group B are less than 0.05 hence we can conclude that effect observed in both groups are significant.

Stiffness

We can observe that P-Values for Group A and Group B are less than 0.05 hence we can conclude that effect observed in both groups are significant.

ROM

We can observe that P-Value for Group A is greater than 0.05 and Group B is less than 0.05 hence we can conclude that effect observed in Group A is not significant while Group B is significant.

WOMAC Scale

We can observe that P-Values for Group A and Group B are less than 0.05 hence we can conclude that effect observed in both groups are significant.

CONCLUSION

This study was under taken to evaluate the science behind such wonderful herb. It proves the properties on scientific ground, to provide cheap and safe option for *Sandhivata*, to effec-

tively adopt the therapeutic uses of this plant and to help needy patients. This study was conducted to assess the effect of *khanduchakka* oil with and without tab. *yograj guggul* in *sandhivata*. The demographic observation of current study concluded that incidence of *sandhivata* mostly found in the middle age, housewife and rural peoples. Local application of *khanduchakka* oil with *yograj guggul* shown significant improvement in pain, tenderness, stiffness, ROM and WOMAC scale than only intervention of *yograj guggul*. Hence it can be concluded that *Khanduchakka* oil possesses significant effect on the cardinal symptoms of *Sandhivata*.

Further study can be conducted in large number of *sandhivata* patient from longer duration for confirmation of results. Also it would be one of the best options of crop cultivation to farmer for financial support.

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