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Research Article

A STUDY ON KANDUGHNA TAILA IN FILARIAL LYMPHANGITIS AND ULCERS

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ABSTRACT

The disease Shlipada is very common in Andhra Pradesh Coastal belts. The chronic filarial patients used to suffer from acute periodic episodes. During these acute periodic episodes majority of the filarial patients develop lymphangitis (inflammation of lymphatic vessel), wounds and ulcers in affected legs. Some of the patients develop oozing blisters and pustules. Patients with these acute symptoms suffer from severe pain and tenderness and un-hygiene may lead to secondary bacterial infections. These periodic episodes often end with fibrosis and permanent swelling (Lymphedema). Many Ayurvedic herbal and herbo-mineral drugs were successfully used internally to reduce chronic filarial swelling (lymphedema), but there is an ultimate need to find an external application to reduce the acute symptoms like lymphangitis, wounds and ulcers. *Kandughna taila* is a *Ayurvedic* herbal oil prepared from *Kandughna Dashaimani* (a group of 10 drugs indicated in Itching) of *Caraka samhita*. This *Kandughna taila* was selected to study externally on Filarial patients. As a part of PhD study to find the efficacy of drug this oil alone was used in 28 patients in an open clinical trail. Encouraging results were observed during and after 30 days of treatment. Out of 28 cases, 8 (28.8%) got good response, 15 (53.6%) got fair response, 2 (7.1%) got poor response and 3 (10.7%) cases did not show any response. Overall 63.68% relief was found in all acute clinical parameters. Parameter wise 62% of relief in lymphangitis, 56.1% in pain, 62.5% in tenderness, 77.78% relief in wound/ ulcer were found. In statistical analysis based paired t-test relief on acute symptoms like lymphangitis, pain, tenderness, wound were found highly significant ($P < 0.0001$). Statistically overall effect of treatment on acute symptoms was also found highly significant ($P < 0.0001$).

KEYWORDS: *Shlipada*, Filariasis, *Kandughna taila*, *Lymphangitis*, Pain, Tenderness and Fever.

INTRODUCTION

India is the largest Filariasis endemic country, contributing 40% of total global burden of Filariasis. According to the global estimates made in 1995, there are nearly 1100 million people at the risk of Filariasis and 120 million diagnosed cases of Filariasis¹.

Sushruta has provided the detailed description of *Shlipada* covering the etiopathogenesis, clinical features, types and prognosis^{2,3}. *Caraka* explained this as sub type in the Chapter of *Shotha*⁴. *Madhava* 7th A.D. has given an independent disease entity to *Shlipada* and explained epidemiology, aetiopathogenesis, classification and prognosis⁵. The disease is mainly characterized by the swelling of legs and feet and some times also affects scrotum in Males and Breasts in Females. *Shlipada* is a *Tridoshaja Vyadhi* with *Kapha Dosh* predominance. Based on causative *Doshas* (body humors) the disease is three types^{2,5} Viz. *Vata*, *Pitta* and *Kapha*. Rough, dry, blackish swelling with splitting pain and fever are characteristics of *Vataja* variety^{2,5}. Yellowish soft swelling accompanied by burning

sensation and fever are characteristics of *Pittaja* variety^{2,5}. Smooth, whitish, heavy and hard swelling is characteristics of *Kaphaja* variety of *Shlipada*^{2,5}. As per Ayurvedic classics the disease originates near the river areas and is prevalent in *Anupdesha* (marshy lands)^{2,5}. In the treatment of disease diets and activities those reduce the *Kaphadosha* are mainly indicated³. In *Caraka Samhita Siravedha* (blood letting by venous puncture) is advocated in the treatment of *Shlipada*⁴. External application of mustard seeds has also been recommended⁴.

According to modern view Filariasis (*Shlipada*) is a vector born parasitic disease caused mainly by three lymphatic dwelling, nematode parasites viz, *Wuchereria bancrofti*, *Burgia malayi* and *Burgia timori*. Among them *Wuchereria bancrofti* is most common in India (98%).

Presence of adult Filarial worms normally obstructs lymphatic drainage and causes swelling. Death of these adult worms leads to granulomatous

inflammation and permanent fibrosis. Acute periodic episodes of the disease cause local inflammation involving skin, lymph nodes (lymphadenitis) and lymphatic vessels (lymphangitis). During these attacks patients suffer from Pain, Tenderness and Fever. This inflammation often accompanies the chronic Lymphedema and Un-hygiene leads to secondary bacterial infections⁶. Studies proved that bacterial infections, particularly bacterial invasion in skin of chronic lymphedema (dermatitis) leads to Adenolymphangitis (ADL) and progression of disease. To prevent the disease progression as a part of the PhD an attempt was made to evaluate the effect of *Kandughna*

taila in Filarial Lymphangitis and Ulcers at Regional Research Institute (Ayurveda), Vijayawada.

MATERIALS AND METHODS

a. Place of Study: Regional Research Institute (Ay), Vijayawada as a part of PhD study under Dr. NTR, University of health sciences, Vijayawada, A.P.

b. Type of study : Pilot study

c. Source & authentication of Raw Drugs: - Plant Taxonomy Division, Laila Impex R&D Centre and CCRAS/RRR research centre Vijayawada.

d. Ingredients of *Kandughna taila* along with Ayurvedic and pharmacologic profile

Table 1: Ayurvedic Properties of the Ingredients of *Kandughna taila*

Name of the Ingredient	Rasa	Guna	Veerya	Vipaka	Imp. External action/ uses
<i>Candana</i> (<i>Santalum album</i> Linn.) ^{7, 8}	Madhura Kashaya Tikta	Laghu, Snigdha Pichhila	Shita	Madhura	<i>Daha prashaman</i> (pacifies burning sensation), <i>Varnya</i> (complexion promoters), <i>Kushthahar</i> (destroys skin diseases). Used in Burning sensation, <i>Vrana</i> (wound) & Skin diseases
<i>Nalada</i> (<i>Vetiveria zizanioides</i>) ⁹	Tikta Madhura	Ruksha Laghu,	Shita	Katu	<i>Kandughna</i> (anti itching), <i>Daha prasaman</i> , <i>tvakdoshahar</i> (removes skin deformities), <i>Varnya</i> , <i>Vedapanaya</i> (analgesic). Used in Burning sensation, <i>Vrana</i> & Skin diseases and itching.
<i>Kritamala</i> (<i>Cassia fistula</i> L.) ¹⁰	Madhura	Guru, Mrudu Snigdha	Shita	Madhura	<i>Shothahar</i> (anti oedema), <i>Vedanasthapan</i> (analgesic), <i>Kushthaghna</i> . Used in edema, <i>Vrana</i> & Skin diseases and painful conditions.
<i>Naktamala</i> (<i>Pongamia pinnata</i> Pierre) ¹¹	Tikta Katu Kashaya	Laghu Tikshna	Ushna	Katu	<i>Janthughna</i> (wormicidal), <i>Kandughna</i> , <i>Vranaropan</i> (wound healing) and <i>Shothahar</i> . Used in edema, <i>Vrana</i> & Skin diseases
<i>Nimba</i> (<i>Azadirachta indica</i> A. Juss.) ¹²	Tikta Kashaya	Laghu	Shita	Katu	<i>Janthughna</i> , <i>Kandughna</i> , <i>Kushthaghna</i> . Used in Skin diseases and itching
<i>Kutaja</i> (<i>Holarrhena antidysenterica</i> (L.)Wall.ex.DC.) ¹³	Tikta Kashaya	Laghu Ruksha	Shita	Katu	<i>Kandughna</i> , <i>Kushthaghna</i> , <i>Vrana ropan</i> . Used in Skin diseases, wounds and itching
<i>Sarshapa</i> (<i>Brassica nigra</i> (L.) Koch) ¹⁴	Katu Tikta	Tikshna Snigdha	Ushna	Katu	<i>Kandughna</i> , <i>Kushthaghna</i> , <i>Shothahar</i> . Used in Skin diseases, Filarial swelling
<i>Maduka</i> (<i>Glycyrrhiza glabra</i> L.) ¹⁵	Madhura	Guru Snigdha	Shita	Madhura	<i>Vrana Shothahar</i> (mitigates oedema due to wound). Used in wounds and burning sensation.
<i>Daruharidra</i> (<i>Berberis aristata</i> DC.) ¹⁶	Tikta Kashaya	Laghu Ruksha	Ushna	Katu	<i>Shothahar</i> , <i>Vedana sthapan</i> , <i>Vrana sodhan</i> (wound cleaner). Used in wound related swelling, pain and burning sensation.
<i>Musta</i> (<i>Cyperus rotundus</i> L.) ¹⁷	Tikta Katu Kashaya	Laghu Ruksha	Shita	Katu	<i>Shothahar</i> , <i>tvakdoshahar</i> Used in swelling and skin diseases
<i>Tila taila</i> (sesame oil) ¹⁸	Madhura Anuras- Kashaya & Tikta	Guru Snigdha	Ushna	Madhura	<i>Vedana sthapan</i> , <i>Vrana shodhan</i> and <i>Vrana ropan</i>

Table 2: Important and supportive pharmacological Properties of the Ingredients of Kandughna taila

Drug	supportive pharmacological Properties
<i>Candana</i> (<i>Santalum album</i> Linn) ¹⁹ .	Anti-gonorrhoeal, antibacterial, antiviral, antioxidant and antifungal.
<i>Nalada</i> (<i>Vetiveria zizanioides</i>) ²⁰	Insecticidal, excellent insect repellent and antifungal.
<i>Kritamala</i> (<i>Cassia fistula</i> L.) ²¹	antibacterial, antipyretic, anti-inflammatory, analgesic and antifungal, antiviral
<i>Naktamala</i> (<i>Pongamia pinnata</i> Pierre) ²²	Antibacterial, insecticidal, nematocidal, antipyretic, anthelmintic, anti-tubercular, CNS stimulant and depressant, sedative, wound healing.
<i>Nimba</i> (<i>Azadirachta indica</i> A. Juss.) ²³	antiviral, antibacterial, antifungal, anthelmintic, nematocidal, vermifugal, antitubercular, antimicrobial, anti-inflammatory, analgesic, antipyretic, antiulcer, sedative, antiprotozoal and CNS depressant.
<i>Kutaja</i> (<i>Holarrhena antidysenterica</i> (L.) Wall. ex. DC.) ²⁴	Antiprotozoal and antifungal
<i>Sarshapa</i> (<i>Brassica nigra</i> (L.) Koch) ²⁵	Stimulant and mild counter irritant
<i>Maduka</i> (<i>Glycyrrhiza glabra</i> L.) ²⁶	anti-microbial, anti-atherosclerotic, antiviral, anti-exudative, antiulcer, antimutagenic, antipyretic, antioxidant and anti-inflammatory,
<i>Daruharidra</i> (<i>Berberis aristata</i> DC.) ²⁷	antipyretic, local anesthetic, antiprotozoal, anti T.B., antibacterial, anti-tumour, anti-inflammatory and CNS depressant.
<i>Musta</i> (<i>Cyperus rotundus</i> L.) ²⁸	Tranquillizing, anti-inflammatory, antipyretic, anthelmintic, smooth muscle relaxant and antimicrobial
<i>Tila taila</i> (sesame oil) ²⁹	Nematocidal and anti tumor

e. Mode of preparation of Kandughna taila

Coarse powders of 10 ingredients are taken in equal quantities. Five kilograms mixture of above ten ingredients (500gm each) was boiled in 16 times of water (Approx. 80 liters) till it reduced to one fourth (20 liters) and filtered. This filtered decoction is added with 1250 gm Kalka (Paste prepared from 125 gm. of each above powders) and 5 liters sesame oil and heated till the oil remains.

f. Criteria for selection and exclusion of patients

The established Filarial Patients with in the age limit of 5-70 years suffering from acute periodic episodes with cardinal signs and symptoms like lymphangitis, wounds/ulcers, pain and tenderness were selected for the study. Patients having severe hyperglycemia, and chronic ailments like malignancy were excluded from the study.

g. Criteria for the assessment of the response

Based on the severity specific scores were denoted for Lymphangitis, Pain, Tenderness and wound/Ulcer and measured before and subsequent intervals of the treatment.

h. Gradation of Parameters with specific scores for the assessments of results**II. Lymphangitis**

- a). Swelling of any lymphatic channel visible / palpable - 10
 b). Partially reduced - 5

- c). Completely reduced - 0

V. Pain

- a) Moderate: Patient frequently complain of pain - 8
 b) Mild: Patient tells of pain after asking - 4
 c) Nil: No pain at all - 0

VI. Tenderness

- a) Grade-I. The patient winches and withdraws the affected part - 15
 b) Grade-II The patient winches - 10
 c) Grade-III. The patient says that the part is tender - 5
 d) Grade-IV No tenderness at all - 0

IV. Wound/ Ulcer

- a) Severe oozing and deep wound - 10
 b) Superficial wound with less oozing - 5
 c) No oozing and wound - 0

Basing on the individual score of each finding (I to IV) before and after treatments, the response of the treatment on acute symptoms can be assessed.

Vi. Classification of the Results

- i. Good Response: 75% or more relief in clinical symptomatology
 ii. Fair Response: 50% to 75% relief in symptomatology.
 iii. Poor Response: 25% to 50% relief in symptomatology.
 iv. No Response: Relief below 25% in symptomatology

OBSERVATIONS

Mean age of total patients is 41.32 (Table no-3). Among the 28 patients 17(60.71%) were females and 11(39.29%) were males (Table no-3). Highest incidence of patients was observed in the age group of 46-55 [10(35.71%)]-(Table no-4). Mean disease duration is 9.86 years (Table no-3). Among 28 cases 10 (35.71%)

patients were suffering from Right leg Filariasis, 18(64.29%) patients from left leg (Table no-5). In *Shariraprakriti* (physical constitution) highest incidences were found in *Vatapitta* group [9(32.14%)] and in *Manashkaprakriti* more number of patients were observed in *Rajotamas* group [10(35.71%)] Table no 6.

Table 3: Demographic pattern of 28 Shlipada Patients

Patients Particulars	Ratio
Male: Female	11: 17
Mean age in years	41.32
Mean disease duration in years	9.86

Table 4: Showing the incidence of age

Age Group	5-15	16-25	26-35	36-45	46-55	56-65	66-70	Total
No. of Pts.	0	4	5	6	10	3	0	28

Table 5: Showing the parts affected:S

Sl. No	Affected Part	No. of Patients
1.	Right leg	10
2.	Left leg	18
	Total	28

Table 6: showing the Prakruti of the patients

Sl.No.	<i>Shariraprakriti</i>	No. of Patients	<i>Manashikaprakriti</i>	No. of Patients
1.	Vata	3	Satva	1
2.	Pitta	2	Rajas	3
3.	Kapha	3	Tamas	3
4.	Vatapitta	9	Satva Rajas	5
5.	Vatakapha	4	Satva Tamas	6
6.	Pittakapha	7	Rajo Tamas	10
7.	Sannipata	0	Sama	0
	Total	28	Total	28

RESULTS

After 30 days of treatment out of 28 patients, 8 (28.8%) got good response, 15 (53.6%) got fair response, 2 (7.1%) got poor response and 3 (10.7%) cases did not show any response (Table 7).

Table 7: Showing the results of the treatment

Drugs	Results of the treatment				
	Good Resp.	Fair Resp.	Poor Resp.	No Resp.	Total
<i>Kandughna taila</i>	8 (28.8%)	15 (53.6%)	2 (7.1%)	3 (10.7%)	28 (100%)

Based on the numerical score before and after treatments the assessment of percentage of relief was done. On assessment, 63.68% relief on over all acute clinical parameters and parameter wise 62% of relief in lymphangitis, 56.1% in pain, 62.5% in tenderness, 77.78% relief in wound/ ulcer were found.

Table 8: Showing the relief on over all parameters

Sl. No	Parameters	Total score Before Treatment	Total score After Treatment	Percentage of relief
2.	Lymphangitis	250	95	62%
5.	Pain	164	72	56.1%
6.	Tenderness	200	75	62.5%
7.	Wound/ Ulcer	135	30	77.78%
	Overall	749	272	63.68%

In statistical analysis based on paired t-test relief on acute symptoms like lymphangitis, pain, tenderness, wound were found highly significant (P<0.0001). Overall effect of treatment on acute symptoms was also found highly significant (P<0.001).

Table 9: Showing the effect of treatment on Lymphangitis [N=28]

Symptom	Mean grade score			S.D	S.E	t	P
	B.T	A.T	BT-AT				
Lymphangitis	8.93	3.39	5.54	± 2.83	0.536	10.33	<0.0001

Table 10: Showing the effect of treatment on Pain [N=26]

Symptom	Mean grade score			S.D	S.E	t	P
	B.T	A.T	BT-AT				
Pain	6.31	2.77	3.54	± 2.35	0.462	7.6667	<0.0001

Table 11: Showing the effect of treatment on Tenderness [N=23]

Symptom	Mean grade score			S.D	S.E	t	P
	B.T	A.T	BT-AT				
Tenderness	8.70	3.26	5.44	± 2.57	0.537	10.1298	<0.0001

Table 12: Showing the effect of treatment on Wound/ Ulcer [N=21]

Symptom	Mean grade score			S.D	S.E	t	P
	B.T	A.T	BT-AT				
Wound/ Ulcer	6.43	1.43	5.00	± 2.24	0.488	10.247	<0.0001

Table 13: Showing the effect of treatment on Overall acute Parameters (Lymphangitis, Pain, Tenderness, Wound/ Ulcer) [N=28]

Symptom	Mean grade score			S.D	S.E	t	P
	B.T	A.T	BT-AT				
Overall Parameters	26.75	9.71	17.04	± 9.43	1.783	9.5554	<0.0001

DISCUSSION

Caraka Dasshaimani (groups of ten drugs) are the most scientific classification of drugs based on their similar properties. *Kandughna Dasshaimani* is one of those groups and the present study was aimed on the role of the oil prepared from this group of drugs, in filarial lymphangitis and ulcers. In the present study highly significant ($P < 0.0001$) results were observed on all individual clinical findings and overall effect of treatment was found highly significant. The properties of each ingredient of this oil support the effect of the treatment.

Among the ingredients of *Kandughna taila*, on external use, all are having *Kandughna* (anti-itching) and *Kushthaghna* (destroying skin diseases) property. *Candana* and *Nalada's Dahaprashaman* (pacifies burning sensation) action, *Kritamala*, *Maduka*, *Musta*, *Daruharidra's Shothahara* (anti oedema) property, *Kritamala*, *Nalada*, *Tilataila*, *Daruharidra's Vedanasthapan* (analgesic) action, *Tilataila* and *Daruharidra's Vrana shodhan* (wound cleaning) and *Tilataila* and *Naktamala's Vranaropan* (wound healing) property, *Candana* and *Nalada's Varnya* (complexion promoting) and *Naktamala's Janthughna* (wormicidal) properties corroborate in getting synergetic action.

Antibacterial, antiviral, Antiprotozoal, antimicrobial, antifungal, anti-inflammatory, analgesic, antiulcer, anti-exudative, wound healing and smooth muscle relaxant properties of the ingredients also supports these highly significant external action of this oil on four acute clinical findings viz. lymphangitis, pain, tenderness and ulcer.

CONCLUSION

Considering all these factors it can be concluded that this *Kandughna taila* is effective on acute clinical findings like Lymphangitis, Pain, Tenderness and Wound. Further research of this formulation can provide more benefits to the filarial population.

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PHOTOGRAPHS

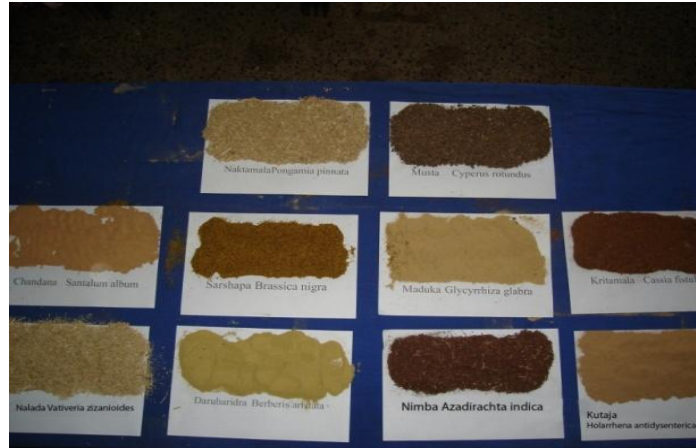


Figure 1. Powders of the ingredients of *Kandughna taila*



Figure 2. Preparation of *Kandughna taila*



Figure 3. Bowel with *Kandughna taila*