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CLINICAL EFFICACY OF *KARANJA PATRA SIDDHA TAILA* IN *KIKKISA* W.S.R. STRIAE GRAVIDARUM

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ABSTRACT

Objective: To assess the preventive and curative effect of *Karanja Patra Siddha taila* (oil prepared from *Ponagamia pinnata* leaves in *Sessamum indicum* oil) on striae gravidarum (SG). **Study Design:** A total 50 randomly selected pregnant women are grouped in to two, Group-A (preventive) & Group-B (curative). In both groups same drug was applied as local applicant by *abhyanga* (gentle massage) for 3 months starting from 4th to 7th months of pregnancy. **Result:** In preventive group 98 % of cases not developed *Kikkisa* (Striae Gravidarum) while in curative group the symptom like itching and burning sensation was cured in first follow up after 15 days and without recurrence. Sign like linear stretch marks, discolouration of skin and cracking of skin over abdomen were least responsive to treatment.

KEYWORDS: Kikkisa, Striae gravidarum, Pregnancy stretch marks, Karanja taila, Pongamia pinnata.

INRTODUCTION

Kikkisa is a disease of pregnancy[1] and is correlated to striae gravidarum (SG) in modern science. The descriptions of *kikkisa* as a disease has been quoted first time by *Acharya Charaka* (2000 B.C.),[2] the author of ancient Ayurvedic literature *'Charak Samhita'*. The

literal meaning of *kikkisa* is 'worm' [3] or 'snake species'.[4] Linear stretch marks over skin resemble serpiginous lesions. This disease is exclusively concerned to the pregnancy but it attracts both obstetrician and dermatologist for diagnosis and management because site of manifestation of the disease is skin and it appears during pregnancy. It is a point of concern as it results in permanent stretch marks or cracks over skin which may last for life time and is undesirable to every woman. In present cosmetic conscious era women are desirous to get rid of such pregnancy marks. This awareness has created a great impact to health professionals to do researches. In ancient time the scholars of *Ayurveda* also thought about this aspect and they had suggested several treatment modalities in deatail. However patho-physiology of the disease had been explained briefly.[5] The goal of *Ayurvedic* management for disease is to prevent disease and cure[6] the same as early as diagnosed. The present research has been done to explore the etio-pathogenesis and management of *kikkisa* on the basis of *Ayurvedic* principle, its scientific approach to prevent the onset and to cure it as early as possible.

MATERIAL AND METHODS

Selection of Cases: A total number of 50 pregnant women, age in between 18-36 years were enrolled from Prasuti Tantra OPD and IPD of Indian Medicine wing of S.S.Hospital, B.H.U. Varanasi.

Inclusion criteria: A total number of 25 cases each in group 'A' and 'B' were taken. Group-A: 25 randomly selected primaegravida having gestational age of 16 weeks to 20 weeks and no any symptoms of *kikkisa* were included in the study to assess preventive effect of trial drug.

Group-B: 25 randomly selected cases having one or more of prodromal symptoms or clinical features of *kikkisa* and gestational age of 16weeks to 20 weeks irrespective of gravidity and parity were included in the study to assess curative effect of trial drug.

Exclusion criteria: Age below 18 and above 36 years, Patients having diseases e.g. Diabetes mellitus, Tuberculosis, Jaundice, Cardiac illness, Hypertensive disorders (pre-eclamsia & eclampsia) and Epilepsy were excluded.

Parameters for clinical study: *Kandu*[7] (Itching), *Vidaha*[8] (Burning sensation), *Twak Bheda*[9] (Cracking of Skin), *Rekha swaroop twak sankoch*[10] (Linear stretch marks over skin) *&* *Vaivarnyata*[11] (Discolouration of skin) were considered for clinical assesment.

Table No. 1: Criteria for clinical assessment

S.N.	Clinical Features	0	1	2	3	4
1.	*Kandu* (Itching)	No *Kandu*	Mild *Kandu* (3-4 times in a day)	Moderate *Kandu* (5-10 times in a day But not disturbing normal activities)	Severe *Kandu* (>10 times disturbing normal Activities)	----
2.	*Vidaha* in *Udara* (Burning sensation)	No *Daha*	Mild *Daha* (1- 2 times in a day and is ignored by the patient).	Moderate *Daha* (3 –5 times in a day but not disturbing normal activities)	Severe *Daha* (>5 times also disturbing normal activities and normal sleep)	----
3.	*Twak Bheda* (Cracking of skin)	No *Twak Bheda*	Mild *Twak Bheda* (Middle part of lower abdomen just Shiny)	Moderate *Twak Bheda* (In the flank of lower abdomen and shiny to glistening type)	Severe *Twak Bheda* (Wide, flat, depressed or over whole abdomen)	-----
4.	*Rekha Swaroop Twak Sankoch* (*RSTS*) [Linear stretch marks over abdominal skin]	No *RSTS* (Normal Skin)	Mild *RSTS* (Mildly observed on the lowe abdomen)	Moderate *RSTS*, (Near the peripheral region of abdomen)	Severe *RSTS* (Most of the region of whole abdomen and causing mental distress)	-----
5.	*Vaivarnyata* (Discolouration of skin)	No *Vaivarnyata* (Normal abdominal skin)	Pinkish	Pinkish- red	Yellowish-white or Purple	Black

Investigations: Routine investigations of Antenatal check-up were done.

- Haematological: Hb, TLC, DLC, ESR.
- Immunological: ABO-Rh Grouping, HIV, HBsAg, VDRL (for both Husband & Wife)
- Urine: Routine examinations. : Microscopic examinations.
- Biochemical investigations: Blood sugar (Fasting), Blood urea
- USG: obstetric for Gestational age, EDD, Amniotic Fluid

LFT was done in those patients having complaints of itching all over body or other than abdomen and thoracic region with clinical sign of jaundice (Icterus etc.) Blood sugar level estimated to exclude diabetes mellitus.

Selection, collection, preparation and administration of trial drug: The trial drug *Karanja patra* was selected for study as per reference.[12] Drug was collected from Department of Dravyaguna (IMS-BHU) Varanasi. Oil was prepared with fresh leaves of *Karanja*. (Table 2).

Table no. 2: Drug preparation[13]

Drug	Form	Ratio	Quantity
Kalka dravya	Fine paste of fresh *Karanja* (Pongamia pinnata) leaves	1part	1.5 kg
Sneha dravya	Murchhita *Til taila* (oil extract from seed of *Sessamum indicum*)	4 parts	6 litres
Drava dravya	Liquid media (*Karanja patra kashaya*)	16 parts	24 litres

Kalka and *taila* are mixed together, then *drava dravya* is added in ratio of 1:4:16, boiled and stirred continuously, to avoid adherence of *kalka* in the vessel taken, till appearance of *taila paka siddhi lakshana.*[14] The prepared drug was applied topically over the abdominal skin after bath or cleaning the area with soap water once in day by gentle massage *(abhyanga)* for 3 months duration.

Follow up

At least three times at interval of one month for both groups, first in 5th month, second in 6th month, third in 7th month of pregnancy or as per requirement during ANC visit.

Statistical analysis

Statistical calculation was done by SPSS software (version 17). For intra group comparison χ^2 and p value by Friedman Test while for inter group comparison χ^2 and p values by non parametric K-sample related test was done.

Table No.3: Effect of *Karanja Patra Siddha Taila* on *Kandu* in group A and B

Group	Score	Initial	Follow up s				Intra group comparison (Friedman test)
			FU-I	FU-II	FU-III	AT	
Group- A	0	25 (100%)	24 (96%)	25 (100%)	25 (100%)	25 (100%)	χ^2=3.000 p>0.05 NS
	1	0 (0%)	1 (4%)	0 (0%)	0 (0%)	0 (0%)	
	2	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	3	0 (0%)	0(0%)	0 (0%)	0 (0%)	0 (0%)	
Group- B	0	4 (16%)	17 (68%)	23 (92%)	25 (100%)	25 (100%)	χ^2=50.245 p <0.001 HS
	1	13 (52%)	7 (28%)	1 (4%)	0 (0%)	0 (0%)	
	2	4 (16%)	1 (4%)	1 (4%)	0 (0%)	0 (0%)	
	3	4 (16%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Inter group comparison Pearson χ^2(Chi-square) test		χ^2=36.207 p <0.001 HS	χ^2=6.695 p<0.05 S	χ^2=2.083 p>0.05 NS	χ^2=0 p= NS	χ^2=0 p= NS	-

Observation: During the period of therapy no any adverse effect was observed in any patient. Demographic data indicate maximum number of cases were in age group of 18-25 years (48%), were of Hindu religion (94%) belonging to semi urban area (44%), were

housewives (90%) with senior secondary level of education (50%), having middle socioeconomic status (72%), vegetarian (54%) and spicy dietary habit (78%), having regular bowel habit (50%), normal sleep habit (88%) and good hygiene (62%). On evaluating *Dashvidhparikshya bhava*; *pitta-kaphaj prakriti* (42%), *vata pittaja prakriti* (40%), *kapha vataja prakriti* (18%), and are of *pravara satmya* (62%), *madhyam satva* (68%), having *pravara abhyaharan shakti* (52%), and *madhyama jaran shakti* (66%).

Table No. 4: Effect of *Karanja Patra Siddha Taila* on *Vidaha* in *udara* in group A and B

Group	Score	Initial	Number and % of cases				Intra group comparison
			FU-I	FU-II	FU-III	AT	
Group- A	0	25 (100%)	25 (100%)	25 (100%)	25 (100%)	25 (100%)	χ^2=0 p >0.05 NS (Friedman test)
	1	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	2	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	3	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Group- B	0	12 (48%)	22 (88%)	25 (100%)	25 (100%)	25 (100%)	χ^2=33.635 p <0.001 HS (Friedman test)
	1	10 (40%)	2 (8%)	0 (0%)	0 (0%)	0 (0%)	
	2	2 (8%)	1 (4%)	0 (0%)	0 (0%)	0 (0%)	
	3	1 (4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Inter group comparison Pearson χ^2 test		χ^2=17.568 p <0.001 HS	χ^2=3.191 p>0.05 NS	χ^2=0 p= NS	χ^2=0 p= NS	χ^2=0 p= NS	-

Table No. 5: Effect of *Karanja Patra Siddha Taila* on *Twak Bheda* in group A and B

Group	Score	Initial	Follow-up				Intra group comparison
			FU-I	FU-II	FU-III	AT	
Group- A	0	25 (100%)	25 (100%)	25 (100%)	25 (100%)	25 (100%)	χ^2=0 p >0.05 NS (Friedman test)
	1	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	2	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	3	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Group- B	0	8 (32%)	9 (36%)	12 (48%)	13 (52%)	13 (52%)	χ^2=7.517 p >0.05 NS (Friedman test)
	1	9 (36%)	8 (32%)	6 (24%)	5 (20%)	5 (20%)	
	2	6 (24%)	6 (24%)	5 (20%)	5 (20%)	5 (20%)	
	3	2 (8%)	2 (8%)	2 (8%)	2 (8%)	2 (8%)	
Inter group comparison Pearson χ^2 test		χ^2=25.758 p <0.001 HS	χ^2=23.529 p <0.001 HS	χ^2=17.568 p <0.001 HS	χ^2=17.568 p <0.001 HS	χ^2=17.568 p <0.001 HS	-

Table No. 6: Effect of *Karanja Patra Siddha Taila* on *RSTS* in group A and B

Group	Score	Initial	Follow-up				Intra group comparison
			FU-I	FU-II	FU-III	AT	
Group- A	0	25 (100%)	24 (96%)	23 (92%)	24 (96%)	24 (96%)	χ^2=3.000 p >0.05 NS (Friedman test)
	1	0 (0%)	1 (4%)	2 (8%)	1 (4%)	1 (4%)	
	2	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	3	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Group- B	0	7 (28%)	7 (28%)	9 (36%)	11 (44%)	11 (44%)	χ^2=16.720 p <0.05 S (Friedman test)
	1	3 (12%)	3 (12%)	8 (32%)	6 (24%)	6 (24%)	
	2	14 (56%)	14 (56%)	7 (28%)	7 (28%)	7 (28%)	
	3	1 (4%)	1 (4%)	1 (4%)	1 (4%)	1 (4%)	
Inter group comparison Pearson χ^2 test		χ^2=28.251 p <0.001 HS	χ^2=28.251 p <0.001 HS	χ^2=24.237 p <0.001 HS	χ^2=14.500 p <0.001 HS	χ^2=14.500 p <0.001 HS	-

Table No. 7: Effect of *Karanja Patra Siddha Taila* on *Vaivarnya* in group A and B

Group	Score	Initial	Follow-up				Intra group comparison
			FU-I	FU-II	FU-III	AT	
Group- A	0	25 (100%)	25 (100%)	24 (96%)	24 (96%)	24 (96%)	χ^2=3.000 p >0.05 NS (Friedman test)
	1	0 (0%)	0 (0%)	1 (4%)	1 (4%)	1 (4%)	
	2	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
	3	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Group- B	0	9 (36%)	9 (36%)	10 (40%)	12 (48%)	12 (48%)	χ^2=11.889 p <0.05 S (Friedman test)
	1	9 (36%)	9 (36%)	9 (36%)	7 (28%)	7 (28%)	
	2	7 (28%)	7 (28%)	6 (24%)	6 (24%)	6 (24%)	
	3	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Inter group comparison Pearson χ^2 test		χ^2=23.529 p <0.001 HS	χ^2=23.529 p <0.001 HS	χ^2=18.165 p <0.001 HS	χ^2=14.444 p <0.001 HS	χ^2=14.444 p <0.001 HS	-

RESULTS AND DISCUSSION

The action of drug on *kikkisa* can be understood by the fact that *tikta rasa* predominant *karanja patra* has property to pacify *pitta*. The *tikshna guna* has main action over *sthira guna* of *kapha dosha*, and *ushna virya* can provoke *pitta* but it does not occur because *pitta shaman* is due to its *tikta rasa*. Its *ushna virya* is mainly utilised to pacify the *vata* and *kapha dosha*.[15] Here desired effect is to establish the *dosha samya*. The *rogaghnta* is concerned to *Kandughna* action. Thus *Kandughna* action relives itching complaints.

The active compound of *Karanja* has anti pruritic and antibacterial action. Leaves are active against Micrococcus[16] and have antiviral activity against white Spot Syndrome Virus of *Penaeus monodon Fabricius*.[17] Antifungal and antibacterial activity of different concentration of oil obtained from *Pongamia pinnata* has been evaluated by some other

researches.[18] These researches support our available knowledge from classics for its medicinal value in present era for its use over skin. The result of this study was based on the observation and findings of both the groups in initial and subsequent follow-ups along with statistical comparison of the follow-ups within the group and between the groups. The assessment was done on the basis of total effect of therapy with respect to changes in the sign and symptoms of *kikkisa* in both groups. The diseases was totally prevented (Very good effect) in Group A if none of the symptoms and sign appeared, partially prevented (good effect) when one or two symptoms or sign appeared, and not prevented (poor effect) when more than two sign or symptoms or both appeared after application of *Karanja patra siddha taila* for 3 months. The disease was cured (very good effect of drug) in group B if all symptoms and sign disappeared after completion of treatment, was improved (good effect) when one or two symptoms or sign remain present and rest other disappeared after completion of treatment or when severe symptom is not more than one, moderate symptom not more than two and mild symptoms also not more than two remain present after completion of treatment. The disease was said unchanged (poor effect of drug) when all sign and symptoms remains present even after application of *Karanja patra siddha taila* for 3 months. In group-A 96% cases and in group-B 40% cases have very good effect of trial drug. Good effect of drug was found in 4% cases of group-A and 52% cases of group-B. Only 8% cases had poor result in group-B. On comparison better result was observed in group-A (preventive group) as compared to group-B (curative group) and is also proved statistically by highly significant difference in both groups ($p<0.001$).

CONCLUSIONS

The preventive effect of trial drug has shown a better result in comparison to that of its therapeutic role in management of *kikkisa.* On the basis of its abundant availability, cost efficacy, easier mode of application and safety aspect in pregnancy it can be used in management of striae gravidarum.

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