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A Clinical Study to Evaluate the Efficacy of *Pinda Taila* in the Symptomatic Management of *Daha* and *Shoola* of *Vatarakta* w.s.r. to Diabetic Neuropathy

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ABSTRACT

Background: *Vatarakta* is a unique clinical manifestation explained in the Ayurvedic classics having the involvement of both *Vata Dosha* and *Rakta Dhatu*. It is a disease predominantly affecting the extremities mainly the *Pada* and *Hasta*. Due to the similarity in the pathology of *Vatarakta* and Diabetic neuropathy, many symptoms like *Daha* and *Shoola* which are manifested in *Vatarakta* are also observed to be manifested in Diabetic Neuropathy. *Pinda Taila* is one such formulation mentioned in our classics for the relief of *Daha* and *Shoola* developed in *Vatarakta*. **Aims and objectives:** To evaluate the efficacy of *Pinda Taila* in the symptomatic management of *Daha* and *Shoola* of Diabetic Neuropathy. **Materials and methods:** 20 patients diagnosed with Diabetic Neuropathy suffering from *Daha* and *Shoola* were selected for the study. **Results and Conclusion:** *Pinda Taila* was observed to be statistically efficacious in the management of the symptom *Shoola* than *Daha*.

KEYWORDS

Pinda Taila, Vatarakta, Diabetic Neuropathy, Daha, Shoola



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INTRODUCTION

Vatarakta is a unique clinical manifestation explained in the Ayurvedic classics having the involvement of both *Vata Dosha* and *Rakta Dhatu*¹. It is a *Vyadhi* predominantly affecting the extremities mainly the *Pada* and *Hasta*. The obstruction to the flow of *Vata Dosha* as well as *Rakta Dhatu* is the main pathology involved. This pathology in *Vatarakta* is possible by the occurrence of *Raktamarga Avarana* due to variant modes of etiological factors where *Santarpana Ahara* and *Vihara* play a crucial role. A person when indulges in these etiological factors, proves to result in excessive accumulation of abnormal *Kapha Dosha* and *Medo Dhatu* in the *Raktavaha Srotas* which is one of the leading pathology involved in the causation of diseases occurring in any part of the body. The same etiopathogenesis along with *Vatarakta* can also be observed in *Prameha*, *Sthoulya* and *Shonita Dushti*. Due to this similarity in the pathology, many symptoms like *Daha* and *Shoola* which are manifested in *Vatarakta* are also observed to be manifested in Diabetic Neuropathy. Diabetic Neuropathy is a nerve damaging disorder associated with diabetes mellitus. This condition is said to be the result of diabetic micro-vascular

injury involving small blood vessels. Diabetic Neuropathy affects all peripheral nerves including sensory and motor neurons. The clinical manifestation of Diabetic Neuropathy can show varied symptoms like burning sensation in the foot, paraesthesia, dysesthesia, numbness etc².

*Pinda Taila*³ is one such Yoga mentioned in our classics for the relief of *Daha* and *Shoola* developed in *Vatarakta*. As many Ayurvedic physicians are successfully practicing the application of *Pinda Taila* in the symptomatic management of Diabetic Neuropathy, a clinical study was taken up to evaluate the efficacy of *Pinda Taila* in the symptomatic management of *Daha* and *Shoola* of *Vatarakta* w.s.r to Diabetic Neuropathy (DN).

AIM

To evaluate the efficacy of *Pinda Taila* in the symptomatic management of *Daha* and *Shoola* of DN

Ethical Committee Clearance Number-SDMCAU/ACA-49/ECA26/15-16.

PHARMACEUTICAL

PREPARATION OF *PINDA TAILA*

The preparation of *Pinda Taila* was carried out as per the method mentioned in *Charaka Samhita*⁴. *Taila Murchana Samskara* was carried out initially as per



the reference of *Bhaishajya Ratnavali*. 10lts of *Murchita Tila Taila* was taken to prepare *Pinda Taila*. The *Kalka Dravyas*; *Manjishtha*, *Sariva*, *Sarjarasa* and *Madhuchishtha* were taken in 625g each and *Sneha Paka* was carried until *Sneha Siddhi Lakshanas* were appreciated. The *Paka* was stopped at *Madhyama Paka* as it was further being used for *Abhyanga*⁵. The prepared oil was packed in wide mouthed air tight containers and stored.

MATERIALS AND METHODS

Source of data:

Twenty patients attending the OPD and IPD of SDM *Ayurveda* Hospital, Udupi, Karnataka diagnosed with DN fulfilling the inclusion and exclusion criteria were selected for the study.

Methods of collection of data:

Twenty patients attending the OPD and IPD of SDM *Ayurveda* Hospital, Udupi, Karnataka diagnosed with Diabetic Neuropathy suffering from *Daha* and *Shoola* and fulfilling the inclusion and exclusion criteria were selected for the study. A complete profile of the patient was prepared including all the details of history taking including the symptomatology, physical signs and symptoms, patients' *Prakriti* along with elaborate assessment of pain and burning

sensation using standard questionnaires and examination techniques.

INCLUSION CRITERIA

1. Patients between the age group of 30 -70 yrs.
2. Patients diagnosed with Diabetic Neuropathy and suffering from *Daha* and *Shoola*.

EXCLUSION CRITERIA:

1. Any clinical manifestations with ulceration/ gangrene/edema/ any skin lesion in the affected area.

DESIGN OF THE STUDY:

An open clinical study with 20 patients diagnosed with Diabetic Neuropathy, suffering from *Daha* and *Shoola* and fulfilling the inclusion and exclusion criteria were randomly selected.

INTERVENTION:

External application of *Pinda Taila* was done for 7 days. Each day application was done to the affected area for two times i.e., morning and evening for maximum of fifteen minutes⁶.

FOLLOW UP PERIOD: 7 days

DURATION OF THE STUDY: 14 days

ASSESSMENT CRITERIA

The patients' response was assessed on the basis of subjective and objective parameters and analyzed statistically by Wilcoxon Signed Rank test.

SUBJECTIVE PARAMETERS

ASSESSMENT SCALE FOR PAIN:



- a) 0 No pain
- b) 1-2 Can be ignored- mild
- c) 3-4 Interferes with tasks- moderate
- d) 5-6 Interferes with concentration- moderate
- e) 7-8 Interferes with basic needs- severe
- f) 9-10 Bed rest required- worst

- e) 7-8 Interferes with basic needs –severe
- f) 9-10 Bed rest required-worst

ASSESSMENT SCALE FOR BURNING SENSATION:

- a) 0 No burning sensation
- b) 1-2 Can be ignored- mild
- c) 3-4 Interferes with tasks-moderate
- d) 5-6 Interferes with concentration- moderate

OBJECTIVE PARAMETERS

- Tuning fork test
- Peripheral pulse
- Deep tendon reflexes

INVESTIGATIONS:

1. Fasting blood sugar.
2. Post-prandial blood sugar.

OBSERVATIONS AND RESULTS

The distribution of patients according to different demographic variables has been depicted in table no.1.

Demographic Data

Table 1 Distribution of patients according to different demographic variables

Sl.No.	Variables	Observations in Maximum incidence	Percentage
01.	Age	60-70	75%
02.	Gender	Male	85%
03.	Religion	Hindu	95%
04.	Educations	Graduate	80%
05.	Marital status	Married	95%
06.	Socio-economic status	Middle class	85%
07.	Occupation	Sedentary	60%
08.	Place	Urban	80%
09.	Duration of diabetes	0-10 years	65%
10.	Duration of Diabetic Neuropathy	5-6 months	35%
11.	Nature of work	Standing for long hours	40%
12.	Diet	Vegetarian and mixed	50% each
13.	Appetite	Good	90%
14.	Habits	Vishamashana	45%
15.	Rasapradhanata in Ahara	Combination of katu-amla-lavana	80%
16.	Prakriti	Vatapitta	65%
17.	Sara	Madhyama	80%
18.	Pramana	Madhyama	85%
19.	Samhanana	Madhyama	85%
20.	Satwa	Madhyama	85%
21.	Satmya	Madhyama	85%
22.	Ahara Shakti	Madhyama	85%
23.	Vyayama Shakti	Madhyama	85%
24.	Site of the disease	<i>Pada</i>	55%
25.	Symptoms	Pain and burning	35%



RESULTS AND DISCUSSION

The statistical analysis of subjective and objective parameters of the study has been

shown in table no. 2 and table no. 3 respectively.

Table 2 Statistical analysis of subjective parameters (Wilcoxon signed rank test)

SUBJECTIVE PARAMETERS						
Variables	Z value		p value		Inference	
	BT-AT	BT-FU	BT-AT	BT-FU	BT-AT	BT-FU
Pain	-3.500	-3.500	.000	.000	HS	HS
Burning sensation	-3.317	-3.051	.001	.002	HS	S
Pins & needles	-1.000	-1.000	.317	.317	NS	NS
Tingling sensation	.000	.000	1.000	1.000	NS	NS
Numbness	.000	.000	1.000	1.000	1.000	1.000

Table 3 Statistical analysis of objective parameters (Wilcoxon signed rank test)

OBJECTIVE PARAMETERS												
Paramet ers	DATA	Negative ranks			Positive ranks			Ties	Total	Z value	p value	Inf- erence
		N	MR	SR	N	MR	SR					
Tuning fork test	BT-AT	0	.00	.00	2	1.50	3.00	18	20	-1.414	.157	NS
	BT-FU	0	.00	.00	2	1.50	3.00	18	20	-1.414	.157	NS
Peripher al pulse	BT-AT	0	.00	.00	1	1.00	1.00	19	20	-1.000	.317	NS
	BT-FU	0	.00	.00	1	1.00	1.00	19	20	-1.000	.317	NS
Deep tendon reflexes	BT-AT	0	.00	.00	0	.00	.00	20	20	.000	1.000	NS
	BT-FU	0	.00	.00	0	.00	.00	20	20	.000	1.000	NS

DISCUSSION ON SUBJECTIVE PARAMETERS

Discussion of the effect on Pain:

- Results were compared before and after treatment, highly significant results were obtained with 'Z' value -3.500 and 'p' value 0.000. From the above statement we can infer that *Pinda Taila* had better efficacy in the management of the symptom pain.

Discussion on the effect on Burning sensation:

- Results were compared before and after treatment, highly significant results were obtained with 'Z' value -3.317 and 'p' value 0.001. From the above results it can be inferred that *Pinda Taila* does not

have significant effect in the reduction of burning sensation.

Discussion on the effect on Pins and needles:

- Results were compared before and after treatment, Non significant results were obtained with 'Z' value -1.000 and 'p' value 0.317. Hence it can be stated that *Pinda Taila* does not have any action on the symptom pins and needles.

Discussion on the effect on Tingling sensation:

- Results were compared before and after treatment, Non significant results were obtained with 'Z' value 0.000 and 'p' value 1.000. Hence it can be stated that



Pinda Taila does not have any action on the symptom tingling sensation.

Discussion on the effect on Numbness

- Results were compared before and after treatment, Non significant results were obtained with 'Z' value 0.000 and 'p' value 1.000. Hence it can be stated that *Pinda Taila* does not have any action on the symptom numbness.

DISCUSSION ON OBJECTIVE PARAMETERS

Discussion on the effect on Tuning Fork test:

- Results were compared before and after treatment, Non significant results were obtained with 'Z' value -1.414 and 'p' value 0.157. This may be due to non-progressed state of the disease condition in patients.

Discussion on effect on the Peripheral Pulse:

- Results were compared before and after treatment, Non significant results were obtained with 'Z' value -1.000 and 'p' value 0.317. These results show that the oil does not have any action on the improvement of peripheral circulation.

Discussion on effect on the deep tendon reflexes:

- Results were compared before and after treatment, Non significant results were obtained with 'Z' value 0.000 and 'p'

value 1.000. There was no change observed in the parameter deep tendon reflexes after treatment as the reflexes were not hampered before treatment.

CONCLUSION

Vatarakta in contemporary view can be included under the umbrella of collagen vascular disorders which includes all types of connective tissue disorders. This comparison can be understood based on the similarities in the symptomatology of the diseases *Vatarakta* as well as collagen vascular disorders. The two types of pathology as already mentioned above, are responsible for the manifestation of *Vatarakta*. Out of the two pathologies, the one caused due to excessive accumulation of *Kapha Dosha* and *Medo Dhatu* in the *Rakta Marga* is similar to the pathology of Diabetic Neuropathy. The therapeutic properties of the drugs like, Sariva(*Hemidismus Indicus*), Manjishta(*Rubia cardifolia*), Sarjarasa(*Shorea robusta resin*) and Madhuchishta(bee wax) are more of *Raktaprasadaka*(blood nourishing), Varnya(gives complexion), Twachya(good for skin) which are essentially required properties in the condition like *Shonita Dushti*(disorders due to blood). On this basis, the selection of formulation based



on the diagnosis like *Shonita Dushti* is also more appropriate. Hence in this study, *Pinda Taila* showed statistically highly significant results in the management of the symptom *Shoola* whereas it showed only statistically significant improvement in the management of the symptom *Daha*.



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