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# A Clinical Study to understand the efficacy of *Prasarinyadi Taila Padabhyanga* in Diabetic Peripheral Neuropathy w.s.r. to *Madhumeha Janya Suptavata*

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## ABSTRACT

Diabetic Peripheral Neuropathy of Modern science is a burning issue in the society with prevalence ranging from 10% to 48% where more than 21% of diabetics are diagnosed incidentally while diagnosing diabetic peripheral neuropathy. Ayurveda, a holistic science of health understands this condition as *Suptavata*, a *Vata Nanatmaja Vyadhi* which is the ultimate result of *Padadaha* and *Suchivat Toda* in *Madhumehi*. Diabetic Peripheral Neuropathy is caused due to the microangiopathy occurring secondary to the Hyperglycaemia and this is taken as *Srotodushti Janya Vatavikruti* leading to *Suptata*. *Prasarinyadi Taila* is a *Yuktikruta Taila Yoga* which is prepared using *Prasarinyadi Kashaya* and *Prasarini Taila*. *Prasarini* is the drug of choice in diseases having *Sira-Snayu Sankocha* as pathology, as it can act on such issue by *Prasarana* of *Rakta*. Microangiopathy and *Sira-Snayu Sankocha* are having similar output. *Padabhyanga* done using *Prasarinyadi Taila* in *Suptavata* can increase the circulation and there by correcting the pathology of Microangiopathy.

**Key words:** *Prasarinyadi Taila, Padabhyanga, Suptavata, Diabetic Peripheral Neuropathy.*

## INTRODUCTION

*Ayurveda* explains number of diseases in various contexts. Here, one of the most important diseases "*Madhumeha Janya Suptavata*" is taken into consideration. Though direct reference on this disease is not found in any of the classics of *Ayurveda*, but we can find explanation regarding *Madhumeha* and *Suptavata* as separate clinical conditions. *Ashtanga Hrudayakara* has explained the symptoms of neuropathy of present era as complication of untreated *Prameha* as *Kara-Pada Daha*.<sup>[1]</sup> With this

point we can consider *Suptavata* and *Karapada Daha* as condition origin of *Prameha* and all types of *Prameha* when left untreated will land to *Madhumeha*.<sup>[2]</sup> *Madhumeha Janya Suptavata* is that clinical condition seen in *Madhumehi* as it connects *Madhumeha Nidana* and *Suptavata Nidana*. Both diseases are caused due to *Vikruti* of *Vata Dosha* as a *Pradhana Karana* in association with other two *Doshas* and *Dushyas*. Signs and symptoms of peripheral neuropathy of diabetics are similar to that of *Suptavata* and *Madhumeha (Prameha) Upadrava*.<sup>[3]</sup> Hence the disease named as *Madhumeha Janya Suptavata*.

Diabetic Peripheral Neuropathy is the clinical condition seen in most of the diabetics as a early complication compared to other complications like retinopathy, nephropathy etc. in a persons with Diabetes it is most common that the blood vessels get narrowed due to the reduction in the diameter of the lumen caused due to deposition leading to the obstruction for the flow of blood thus causing poor and/or no supply of nutrients to the nerve tissues. Neuropathy is a challenging condition to all the

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system of medicine to treat, as its pathology is at the microvessels and difficulty for the medicine to reach the site due to the obstruction for the flow. Both men and women share equal prevalence. The modern medicine advices to add nervine tonics, vitamins and anti-oxidants and in advanced cases the use of anticoagulants in divided doses for longer period. The medicines of this action are costly and not afforded by all class patients. The modern medicine diagnoses this condition as mild, moderate, severe type of sensory, motor or sensory motor neuropathy on the basis of Nerve Conduction Study.

With early identification and proper management by Ayurveda, patients with diabetes will have no added pain other than blood glucose level.

With the due consideration of above factors an attempt is made to disclose the efficacy of the *Prasarinyadi Taila* prepared using *Prasarini, Rasna, Rasona, Bala, Masha, Dugdha, Shunthi* and *Tila Taila*<sup>[4]</sup> as main ingredients having *Vata, Kaphahara* qualities, *Sanjnya Sthapana, Vedana Sthapana, Balya* and *Raktaprasarana Karma* in management of *Madhumeha Janya Suptavata*.

Further considering the present day problems, the treatment has been selected to confirm the following criteria viz. it should be simple, economical, should reduce the symptoms and easily available to bring smile on patients face.

All the above said points have been considered while planning the treatment for this study. 30 subjects were selected incidentally and categorized randomly into a single group and all subjects were treated with *Prasarinyadi Taila Padabhyanga* followed with *Mrudu Nadi Swedana* for the duration of 11 days and follow up of 45 days.

## METHODOLOGY

**Study Design:** Single arm clinical trial

The present study is a clinical trial to access the efficacy of *Prasarinyadi Taila* in the management of Diabetic Peripheral Neuropathy w.s.r. to *Madhumeha Janya Suptavata*. In this study minimum of 30 diagnosed cases of *Madhumeha Janya Suptava*

(Diabetic Peripheral Neuropathy) were incidentally selected and randomly categorized into single group and were analyzed.

- Trial Group - Treated with *Prasarinyadi Taila* and *Mrudu Nadi Swedana*.
- Duration: 11 days
- Follow Up: 45 days

## MATERIALS AND METHODS

### Source of Materials

*Prasarinyadi Taila* was a formulation prepared by the *Yukti* applied to *Prasarinyadi Kashaya* and *Prasarini Taila* of *Sahasra Yoga*. The drugs required for the clinical study were procured from registered *Ayurvedic* medical shops and *Taila* was prepared in the Dept. of P.G. Studies, Rasashastra and Bhaishajya Kalpana, Ayurveda Mahavidyalaya, Hubli.

### Methodology

In the present study, a clinical survey of subjects attending OPD and IPD of Ayurveda Mahavidyalaya Hospital, Hubli was made and subjects fulfilling the inclusion criteria were selected for the study.

### Method of data collection

The literary sources of present study were obtained from Ayurvedic and other classics like *Vedic* literature, medical text books, authentic journals, magazines available in Departmental Library of Post Graduate Studies in Moulika Siddhanta of A.M.V. Hubli and internet publications available in authentic websites.

A clinical evaluation of subjects was by collection of data through information obtained by history, physical examination and laboratory test.

### Inclusion Criteria

- Subjects Diagnosed Case of Diabetic Peripheral Neuropathy.
- Subjects in the age group of 40-70 years.
- Subjects diagnosed for Diabetic Peripheral Neuropathy within 5 years.

**Exclusion Criteria**

- Subjects with infective conditions like TB, HIV, HBsAg etc.
- Subjects in the state of Diabetic Foot, Ulceration.
- Subjects below the age of 40 years and above the age of 70 years.
- Patients suffering from Diabetic Peripheral Neuropathy for more than 5 yrs.
- Uncontrolled Diabetic Profile.

**DIAGNOSIS****Method of Examination of the Patient**

In the present study, the data was collected from the patients with help of interview. A detailed data related to general history, history of past illness, present illness, family history, food habits, history of treatment taken so far etc., was recorded in specially prepared Performa. The systemic examinations of the patient were also done and findings were recorded as per the Performa.

Informed consent of all subjects registered was duly taken before starting the interventions for all subjects.

**Investigations**

- Hb%, TC, DC, ESR, RBS, HbA1C
- HbsAg
- Tridot
- Urine Test
- Nerve Conduction Study - of both Lower Limbs.

**Study Parameters**

The assessment was based on the improvement in the subjective parameters.

**Subjective Parameters**

- Pada Suptata*, sensory symptoms, Parasthesia (numbness).
- Pada Daha* (burning feet).
- Pada Shoola - Suchivat Toda* (pricking pain).
- Positive for Monofilament Test.

These were assessed before and after treatment.

These subjective criteria were graded as per the following chart.

**Table 1: Assessment based on Scoring**

Numbness	
0	Absent
1	Mild
2	Moderate
3	Severe

Burning Sensation	
0	Absent
1	Mild
2	Moderate
3	Severe

Pricking Pain	
0	Absent
1	Mild
2	Moderate
3	Severe

Monofilament Test	
0	Recognizes touch of filament all over the feet
1	Recognizes touch of filament at few places of feet
2	No Recognition

**Assessment Criteria****Statistical tests**

The analysis of the effects of the therapy was based on "t-test" applications. The efficacy of the *Prasarinyadi Taila* was assessed. The significance is discussed on the basis of Mean Scores, Percentage, SD, SE, t and p values.

**Level of Significance**

- $p < 0.05$  is statistically Insignificant
- $p < 0.02$  is statistically Significant
- $p < 0.01$  and  $p < 0.001$  is statistically highly Significant

Finally the criteria for assessment of overall effect are as follows:

- Marked Relief - above 75% improvement
- Moderate Relief - 50 - 75% improvement
- Mild Relief - 25 - 50% improvement
- No Relief - below 25% improvement

**OBSERVATIONS AND RESULTS****Effect of Prasarinyadi Taila Padabhyanga on Burning Sensation**

There were statistically highly significant results in burning sensation from  $1.2667 \pm 1.172$  grades to  $0.40 \pm 0.563$  grades. An improvement of 68.42% was noted.

**Effect of Prasarinyadi Taila Padabhyanga on Numbness**

There was statistically highly significant improvement in Numbness from  $1.50 \pm 1.306$  grades to  $0.5667 \pm 0.6789$  grades. An improvement of 62.22% was noted.

**Effect of Prasarinyadi Taila Padabhyanga on Pricking Pain**

There was statistically highly significant improvement in Pricking pain from  $1.00 \pm 1.082$  grades to  $0.2667 \pm 0.4497$  grades. An improvement of 73.33% was noted.

**Effect of Prasarinyadi Taila Padabhyanga on Monofilament Test**

There was statistically highly significant changes in Monofilament test from  $0.7667 \pm 0.15671$  grades to  $0.1333 \pm 0.06312$  grades. An improvement of 82.61% was noted.

**DISCUSSION**

*Madhumeha* is a fast growing disease in the globe having many complications and Diabetic Peripheral Neuropathy is one among them. *Madhumeha Upadrava* explained in classics have similarity to the symptoms of Diabetic Peripheral Neuropathy, hence the term is coined as *Madhumeha Janya Suptavata* which is originated as complication of *Madhumeha*. *Prasarini* is the drug having *Samgnya Sthapan*, *Raktaprasarana* and *Vedanaharana* action is used as the prime drug in preparation of the *Taila Yoga*. Microangiopathy being the cause for the Diabetic Peripheral Neuropathy, where in the nutrients are not being supplied to the nerve roots which is understood in *Ayurveda* as *Kuposhana* due to *Sira-Snayu Sankocha*. *Prasarinyadi Taila* is the drug of choice in *Apabahuka* which has *Sira-Snayu Sankocha* as pathology. Hence the drug is used for therapy in this condition can correct the pathology and minimise the symptoms to bring smile on face.

The *Prasarinyadi Taila* is prepared by applying *Yukti* to the two *Yogas* of *Sahasrayoga* such as *Prasarini Taila* and *Prasarinyadi Kashaya*, the *Prasarinyadi Taila* is prepared by replacing the *Prasarini Kashaya* used in *Prasarini Taila* with that of *Prasarinyadi Kashaya*.

With this *Chikitsa*, in the present study, 10 subjects showed Marked Relief, 13 subjects showed Moderate relief and 07 subjects showed Mild Relief.

**CONCLUSION**

With the above study, it is suggestive that the basic pathology of Microangiopathy or *Sira-Snayu Sankocha* in the manifestation of the *Suptavta* in *Madhumehi* can be effectively managed with the *Ayurvedic* therapy of *Padabhyanga* done using *Prasarinyadi Taila* which is having *Rakta Prasarana* as the basic function.

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