Research Article

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ROLE OF *SARVANGA UDVARTANA* AND *SARVANGA TAKRADHARA* IN THE MANAGEMENT OF DIABETIC PERIPHERAL NEUROPATHY WITH SPECIAL REFERENCE TO *MADHUMEHA*: A CLINICAL STUDY

S Jagadesh Kumar [1]*, Shreyas D M [2], Kiran M Goud [3]

[1] PG Scholar, Department of Panchakarma, Sri Kalabyraveshwara Swamy Ayurvedic Medical College, Hospital and Research Center, Bengaluru, Karnataka, India

[2] Assistant Professor, Department of Panchakarma, Sri Kalabyraveshwara Swamy Ayurvedic Medical College, Hospital and Research Center, Bengaluru, Karnataka, India

[3] Professor and Principal, Department of Panchakarma, Sri Kalabyraveshwara Swamy Ayurvedic Medical College, Hospital and Research Center, Bengaluru, Karnataka, India

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***Corresponding author**
E-mail: jagadeshrocky@gmail.com

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ABSTRACT

Diabetes mellitus is a global health problem of this era. Presently India is having the largest diabetic population of 50.8 million. In 2015, diabetes was the direct cause of 1.6 million deaths. Diabetes Mellitus is a metabolic disorder of multiple aetiology characterized by chronic hyperglycaemia with disturbances of carbohydrates, fat and protein metabolism resulting from defects in insulin secretion. Diabetes, particularly type 2 is associated with various long-term complications like Diabetic retinopathy, nephropathy, neuropathy, etc., Globally diabetic neuropathy affects approximately 132 million people as of 2010 (1.9% of population). There is a higher prevalence (60.4%) and incidence (8.76%) of sensory peripheral neuropathy among the observed diabetic patients. In *Ayurveda*, the symptoms of Diabetic neuropathy are explained under the headings of *Purvaroopa* and *upadrava* of *Prameha*. *Madhumeha* is a *bahudrava shleshma* condition. So, *Sarvanga Udvartana* and *Sarvanga Takradhara* is been adopted to counteract the *Samprapti* of *Prameha*. A minimum of 20 subjects who fulfilled the diagnostic and inclusion criteria was subjected to the intervention. The overall results in the study revealed statistically highly significant result after the treatment on reducing symptoms and blood sugar levels.

Keywords: Diabetes mellitus Type 2, Diabetic Neuropathy, *Madhumeha*, *Ayurveda*, *Sarvanga Udvartana, Sarvanga Takradhara*.

INTRODUCTION

Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycaemia. The worldwide prevalence of Diabetes mellitus has risen dramatically over the past two decades, from an estimated 30 million cases in 1985 to 177 million in 2000. Based on current trends, > 360 million individuals will have diabetes by the year 2030. Presently India is having the largest diabetic population of 50.8 million. The chronic complications of Diabetes mellitus affect many organ systems and are responsible for the majority of morbidity and mortality associated with the disease.[1] Globally diabetic neuropathy affects approximately 132 million people as of 2010 (1.9% of population).[2] There is a higher prevalence (60.4%) and incidence (8.76%) of sensory peripheral neuropathy among the observed diabetic patients and it may go on increasing as the age progress.[3] So this disease is becoming a global problem and it affects the daily life. According to *Ayurvedic* principles the symptoms like *Suptata* (numbness) and *Daha* (burning sensation) in body parts especially in hands and feet are described under *Purvaroopa* of *Prameha*.[4] *Daha* is also described among the *Upadrava* (complications) of *Prameha*.[5] *Prameha* is a *Bahu drava Shleshma Vyadhi*.[6] Hence, the study is taken up to evaluate the efficacy of *Sarvanga Udvartana* and *Sarvanga Takradhara* in breaking down the *Samprapti* and in reducing the symptoms.

Aims and Objectives

To evaluate the efficacy of *Sarvanga Udvartana* and *Sarvanga Takradhara* in the management in Diabetic Peripheral Neuropathy Vis-A-Vis *Madhumeha*.

MATERIALS AND METHODS

Source of Data

Total 20 Subjects with clinical features of Diabetic Peripheral Neuropathy Vis-A-Vis *Madhumeha* coming under the inclusion criteria approaching the out-patient and in-patient department of Sri Kalabyraveshwaraswamy Ayurvedic Medical College, Hospital & Research centre, Bengaluru were selected for the study.

The Study was initiated after receiving approval from the Institutional Ethics committee. It was taken on 10/3/18 at Sri Kalabyraveshwaraswamy Ayurvedic Medical College, Hospital & Research centre, Bengaluru.

The study was carried out as per International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP).

Diagnostic criteria

- Subject presenting with the Signs and symptoms of Diabetic peripheral Neuropathy[7]
- Subject presenting with the *lakshanas* of *Madhumeha*[8]
- FBS > 126 mg/dl
- PPBS > 200 mg/dl

Inclusion criteria

- Subject presenting with Signs and symptoms of Diabetic peripheral Neuropathy
- Subject presenting with *lakshanas* of *Madhumeha*
- Subject of either gender in between the age group 30 to 70years
- Subject fit for *Udvartana* and *Takradhara*

Exclusion criteria

Subject with Juvenile Diabetes, Gestational Diabetes, Type 1 Diabetes mellitus and any other systemic illness that interfere with the course of intervention

Study design

A Single arm, active, open label clinical study

Intervention

- The patients were subjected to *Sarvanga Udvartana* and *Sarvanga Takradhara.*
- *Sarvanga Udvartana* was done with *Triphala choorna* and *Kolakulatthadi choorna* for 14 days followed by *Sarvanga Takradhara* with *Musta*, *Amalaki*, *Asanadi Kashaya* and *Takra*.

Assessment criteria

Assessment was done - BT (Before treatment) and AT (After treatment)

Subjective Parameters

- *Karpadadaha*
- *Karpada suptata*

Objective Parameters

- FBS
- PPBS

Investigation

Blood – FBS, PPBS. (Values were taken before the treatment and after the treatment)

Observations

- Total number of Subjects registered for the study – 24
- Total number of Subjects completed the study – 20
- Total number of Dropouts - 4

Distribution of Subjects based on Age (years)

In the present study, 3 (15%) Subjects were belonged to age group of 31-40 years, 3 (15%) Subjects were belonged to age group of 41-50 years, 8 (40%) Subjects were belonged to age group of 51-60 years, 6 (30%) Subjects were belonged to age group of 61-70 years.

Distribution of Subjects based on Gender

In the present study, 11 (55%) Subjects were Males, 9 (45%) Subjects were Females.

Distribution of Subjects based on Duration of Diabetes Mellitus

In the present study, 1 (5%) Subjects were having history of type - 2 DM from 0 - 4.9 years, 7 (35%) Subjects were having history of type - 2 DM from 5 - 9 years, 8 (40%) Subjects were having history of type - 2 DM from 10 - 14.9 years, 4 (20%) Subjects were having history of type - 2 DM from 15 - 20 years.

Statistical Analysis

- For the Statistical analysis, the data obtained in the study were recorded and presented in tabulations and graphs.
- To infer the clinical study and draw conclusions, paired 't' – test was applied for within the group analysis for Objective parameters and Wilcoxon signed rank test was applied for within the group analysis for Subjective parameters.

Interpretation	P Value
Insignificant	> 0.005
Significant	< 0.005
Highly Significant	< 0.01, < 0.001

RESULTS

Table 1: The effect of treatment on Objective Parameters

BT-AT	Mean		Mean diff.	Paired 't' – test				
	Before	After		SD	SE	t- value	P value	Remarks
FBS	187.8	157.25	30.55	46.42	10.38	2.94	< 0.01	**HS**
PPBS	283.9	216.4	67.5	67.75	15.14	4.45	< 0.001	**HS**

BT- Before treatment; AT- After treatment

Table 2: The effect of treatment on Subjective Parameters

BT-AT	Mean	Rank	N	Mean rank	Sum rank	Z value	P value	Remarks
Kara pada Daha	2.05	NR	6	3.50	187.8	2.449	0.014	**HS**
		PR	0	0.00	0.00			
		Ties	14					
Kara pada Suptata	9	NR	0	10	190	3.981	0.01	**HS**
		PR	19	0.00	0.00			
		Ties	1					

BT- Before treatment; AT- After treatment

Effect of treatment on FBS

Before treatment to After treatment, the paired 't' test on FBS revealed statistically highly significant (t = 2.94, p = < 0.01)

Effect of treatment on PPBS

Before treatment to After treatment, the paired 't' test on PPBS revealed statistically highly significant (t = 4.45, p = < 0.001)

Effect of treatment on Kara-pada daha

The Wilcoxon signed rank test on Kara-pada daha was found statistically highly significant (Z = 2.449, p = 0.01)

Effect of treatment on Kara-pada suptata

The Wilcoxon signed rank test on Kara-pada daha was found statistically highly significant (Z = 3.981, p = 0.01)

DISCUSSION

Diabetic Peripheral Neuropathy is a condition which can be understood under the headings of *Purvaroopa* and *Upadrava avasthas* of *Prameha*. *Madhumeha* in its *Samprapti* involves *Bahudrava Shleshma;* which is the resultant of an individual who are involving in the *Nidana's* like *Asyasukha*, *Swapnasukha*, *Dadhi*, *Navaanna*, *Anupa mamsa*, *Guda*[9] and *Ahara* which increases *Kapha* does the *Kshipra Prakopa* of *Shleshma* and this alters *Alinghana shakti* of *Shleshma* and thus resulting in the *Shitilita*. The *Shitilita* is also due to *Rasa-ayanani cha Dourbalyam*[10] (*Dourbalya* in *Rasa*, *Vata*, *Pitta*, *Kapha*, *Shonitavahanam Dhamaninam*) which causes swelling and weakness in the vessels in turn leading to Stasis of blood and thus resulting in Diabetic Peripheral Neuropathy.

The *Madhumeha* with *Manda Utsaha* can be understood as some serious illness which would have been establishing in Diabetes. Hence in *Charaka Samhita* this condition should be tackled with *Ahara* and *Vividha Cheshta* which are *Dhatu Samykara* and *Sukha* to an individual. Where in under different *Viharas* mentioned in *Charaka Samhita* emphasis on *Vividha Vyayama* and *Pragadha Udvartana*, *Snana* and *jalavasekayyi*[11]. Hence *Sarvanga Udvartana* and *Sarvanga Takradhara* which is potent enough to disintegrate the *Samprapti* which is involved in the Diabetic Peripheral Neuropathy.

Mode of action

Udvartana and *Takradhara* are the procedures of *Bahir Parimarjana chikitsa*. These are used in the form of *Bahya Rukshana* which helps in *Pachana* of *dushita doshas* and increases *agni* at the level of *Bhrajaka pitta* in *Twak*. *Udvartana* which is having *Kaphahara, Medasaha Pravilapana (dravikaranam), Medasaha Shoshana, Vatahara, Siramukha Viviktatva, Dourgandhyahara, Tandrahara, Gauravahara* and *Sthirikarnam Anganam* effect.

Takradhara has the property of *Shoshana*. *Shoshana* does the *Shoshana* of *Drava* and thus brings down the *Drava* which is involved in the *Samprapti* of *Madhumeha*. *Sthirikarnam Anganam* by its *Sthirikarana* effect it imparts compactness and resolves the *Shithlangata* which is a prime cause for Diabetic peripheral Neuropathy. *Siramukha Viviktatva* by its *Siramukha Viviktatva* effect it does the Peripheral Vasodilatation.

CONCLUSION

Sarvanga Udvartana and *Sarvanga Takradhara* are proven to reduce the effects of neuropathy and neural degeneration. The *Shoshana* effect reduces the stress on the nerve endings. The nerves are given time to rejuvenate themselves after the procedure hence the effect of pain is managed.

REFERENCES

1. Alvin C. Powers. Volume – 2, Part 15, Endocrinology & metabolism. Diabetes mellitus chapter, 17th Edition, Harrison's Principles of Internal Medicine, Edited by Dennis L. Kasper, Anthony S. Fauci, Stephen L. Hauser, Dan L. Longo, New York: McGraw-Hill Education; 2015. p. 2276.
2. Vos, T, Years lived with disability (yields) for 1160 sequelae of 289 diseases and injuries 1990- 2010: a systematic analysis for the Global Burden of Disease Study 2010, The Lancet;l5Dec 2012; 380(9859): 2163–96.
3. Pradeep Battula, Prevalence of sensory peripheral neuropathy in diabetic patients at diabetes care centre: a cross sectional study, International Journal of Research in Medical Sciences Sep 2017; 5(9): 4066-71.
4. Agnivesha, Prameha Nidana, Charaka Samhita, Ayurveda Deepika Commentary of Chakrapani Datta revised by Charaka & Dridhabala, Ed. By Acharya YT, Chaukhambha Surbharati Prakashan, Varanasi; 2011. p. 215.
5. Agnivesha, Prameha Nidana, Charaka Samhita, Ayurveda Deepika Commentary of Chakrapani Datta revised by Charaka & Dridhabala, Ed. By Acharya YT, Chaukhambha Surbharati Prakashan, Varanasi; 2011. p. 215.
6. Agnivesha, Prameha Nidana, Charaka Samhita, Ayurveda Deepika Commentary of Chakrapani Datta revised by Charaka & Dridhabala, Ed. By Acharya YT, Chaukhambha Surbharati Prakashan, Varanasi; 2011. p. 212.
7. E. R. Pearson, R. J. MC Crimmon, Diabetes mellitus Chapter, 22nd edition, Davidsons Principals & Practice of medicine, edited by Brian R. Walker, Nicki R. Colledge, Stuart H. Ralstor, China: Churchill living stone Elsevier; 2014. p. 809.
8. Agnivesha, Prameha Nidana, Charaka Samhita, Ayurveda Deepika Commentary of Chakrapani Datta revised by Charaka & Dridhabala, Ed. By Acharya YT, Chaukhambha Surbharati Prakashan, Varanasi; 2011. p. 215.
9. Agnivesha, Prameha Chikitsa, Charaka Samhita, Ayurveda Deepika Commentary of Chakrapani Datta revised by

Charaka & Dridhabala, Ed. By Acharya YT, Chaukhambha Surbharati Prakashan, Varanasi; 2011. p. 445.
10. Sushruta, Pramehapidaka Chikitsa, Sushruta Samhita, Narayana Ram (Edi.). with Nibandha Sangraha commentary by Dalhanacharya & Nyayachandrika Commentary by Gayadasa, edited by Acharya YT, published by Chaukhambha Sanskrit Sansthan, Varanasi; 2017. p. 454.
11. Agnivesha, Prameha Chikitsa, Charaka Samhita, Ayurveda Deepika Commentary of Chakrapani Datta revised by Charaka & Dridhabala, Ed. By Acharya YT, Chaukhambha Surbharati Prakashan, Varanasi; 2011. p. 448.

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