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EFFECT OF *SIMHARAMBHADI SARVANGA DHARA* AND SELECTED *SAMANA OUSHADHIS* IN THE MANAGEMENT OF DIABETIC PERIPHERAL NEUROPATHY- A CASE REPORT

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ABSTRACT

Diabetic Peripheral Neuropathy (DPN) is the damage of the nerves due to uncontrolled diabetes. It can affect any of the nerves of nervous system. The symptoms appear as sensory loss first in the toe and progressively moving up the legs, fingers, and arms over time. Tingling sensation, burning sensation, deep aching pain are other related symptoms. The main aim of this study is to improve the quality of life of the patient by reducing the symptoms that disturbing day to day activities. The present case report is a single case study of a 78year old male patient who was diabetic since last 20 years and was diagnosed with DPN. He was admitted in Government Ayurveda Panchakarma Hospital Thiruvananthapuram and was treated with *Simharambhadi sarvanga dhara* said in the context of *Prameha Chikitsa in Yogamrutham* as external procedure and internally with specific *samana oushadhis*. There was significant improvement in the symptoms which was assessed using MNSI, DNS and TCSS scores before and after treatment. The present case study documents that this selected treatment modalities are found to be effective in the management of DPN and thereby improving the quality of life.

KEYWORDS: Diabetic Peripheral Neuropathy, *Simharambhadi Sarvanga dhara, Yogamrutham, Samana oushadhis*

INTRODUCTION

Peripheral neuropathy includes a wide spectrum of clinical conditions that may manifest as dysfunction of peripheral motor, sensory and autonomic nerves.[1] Diabetes mellitus is the most common cause of peripheral neuropathy in developed countries. Diabetic distal symmetric sensory and sensory motor poly neuropathy (DSPN) is the most common form of diabetic neuropathies.[2] DPN frequently exhibit a range of symptoms including pain that exacerbates at night time, hyperalgesia, allodynia, tingling, aching and burning sensations and also limb weakness.[3] It shows up as sensory loss that start in the toes and then moves progressively up the legs, into the fingers and into the arms. In severe cases, it also results in sensory loss of trunk (chest and abdomen) beginning anteriorly in the midline and there after expanding laterally.The prevalence of diabetic peripheral neuropathy in various populations across India has been reported to a range between 9.6 and 78%.[4] Precise cause of DPN is unknown. Major risk factors are heredity, prolonged alcohol use, life style influences and mechanical compression (eg: carpel tunnel). Additionally, smoking has been linked to persistently elevated blood serum glucose levels, which in turn cause insulin resistance and oxidative stress, inflammation and cell damage. [5]

Nerve Conduction Study often exhibit mild to moderate conduction velocity slowing and diminished amplitudes. Axonal degeneration, endothelial hyperplasia and infrequently perivascular inflammation are all seen in nerve biopsies. Strict glycaemic management can either improve the underlying neuropathy or lowers the chance of acquiring new neuropathy. Anti-epileptic drugs, anti-depressants, sodium channel blockers and various analgesics have all been used to treat the excruciating symptoms linked to DSPN.

Ayurvedic texts mentions *prameha* as one of the *Astavidha maha rogas*. The main characteristics of *maha rogas* are *deergha kalanubandam*(chronicity), *prabhootha dosha sanchayatwam* (increased accumulation of doshas), *duschikitsitatwam*(difficult management)*maha marmasrithatwam*(involvement of vital part), *bahupadravatwa*(more complications)etc.[6] The most common type of *prameha* is *Madhumeha* . It is one of the subtypes of *vathaja prameha*. Chronicity and poor glycaemic management results in *Madhumeha*, which can be comparable with the cause of diabetic peripheral neuropathy. In *Samhitas*, there is no direct reference for Diabetic Peripheral Neuropathy. The symptoms of DPN are scattered in *purvarupa, lakshna* and *upadrava* stages of *prameha*. Symptoms like *kara pada daha*(burningsensation) *supthi/swapa*(numbness) *sosha*(wasting) *angasada* (weakness) which are observed in *the prameha* either at *purvarupa, lakshna* or *upadrava* stage can be correlated with symptoms of DPN. Symptoms of DPN can also be correlated with *Avarana janya Vatavyadhi lakshnas*. In *Avarana janya Madhumeha-kapha, pitha, raktha, medas, mamsa* produces *avarana* to the *gathi* of *vatha*[7].Sensory symptoms of neuropathy like numbness(*swapa/supthi*)can be compared with *meda kapha avrutha vatha*[8] and burning sensation (*daha*), pricking sensation (*soochibhiriva nistoda*)with *rakthavrutha vatha*[9] and heaviness of limbs (*gurutwa*) with *kaphavrutha vatha*, tingling sensation (*pipeelika sancharanamiva*)with *mamsavrutha vatha*[10], abnormal pain perception *(toda, soola, sparsha vaigunya, twak sosham*)with *sweda kshaya*[11] with *prameha upadrava*[12] and *pithavrutha vatha*.[13]The management of DPN can be done by removing *avarana* of *vatha* by different entities through *avarana vatha chikitsa* and internally by administering *prameha hara oushada.*

Case history

Patient had a known history of diabetes for 20 years. He is under allopathic medications for this. About 5 years back he had an attack of cellulitis which resulted in pus and open sores in left lower limb. He was admitted in an allopathic hospital for this and his condition was treated successfully there. At that time his blood sugar level was very high and was given insulin injection, since then he was insulin dependent. Gradually he developed numbness in both feet associated with swelling. Followed by that slipping of chappals while walking associated with a feeling as if walking on a cotton wool also developed. In the last 3-4 years he is having pain in both knee joint also. Gradually all his symptoms aggravated. So, he consulted here and was admitted here for IP management.

History of past illness

This 78 years old patient was diabetic for 20 years .

- Hypertension for 10 years and dyslipidaemia for 4 years.

Clinical Findings

The patient had a body weight of 93 kg and with BMI of 34.1 .

Physical examination

Lower limbs- Swelling present in both ankle region associated with discolouration

Examination of sensory system

Light touch

Upper limb- Not Impaired

Lower limb

Right leg –below knee impaired. Right ankle-lateral malleolus area impaired

Left leg- Below knee impaired, Left ankle- impaired

Pin prick

Upper limb- Not impaired

Lower limb

Right shin –impaired, Right ankle-impaired, right sole- not impaired

Left ankle- impaired

Left sole- impaired

Temperature

Hot and cold sensation is impaired in both lower limb

Vibration

Upper limb - Not impaired

Lower limb

Left leg- Vibration sensation impaired in shin area, Medial and lateral malleolus, distal part of toes.

Right leg- Impaired in areas of shin, medial and lateral malleolus and big toe

Reflexes

Both knee jerk and ankle jerk are absent in both leg

Lab investigation

(8/5/2024)

Hb- 10.4g%

FBS- 174 mg%

PPBS- 203 mg%

S. Urea- 37 mg%

S. Uric acid- 6mg%

S. Creatinine- 1.3mg%

HbA1C- 9.6 %

Ayurvedic parameters examination details.

Dasavidha pareeksha

Dosha-Kapha, Pitha, Vatha

Dhushya- Rasa, Rakta, Mamsa, Meda, Majja, Shukra, Vasa, Oja, Lasika, Kleda.

Desha- Bhoomi- Sadharana

Deham- Adhakaya

Bala- Roga- Pravara

Rogi- Madhyama

Satwa- Madhyama

Kalam- Kshanadi-Sarvakala

Vyadhi Avastha- Purana

Anala- Madyama

Prakruthi-Kapha-Pitha

Vaya- Vridha

Vikruthi Pareeksha

Srothas- Rasavaha, Raktavaha, Mamsavaha, Medovaha, Udakavaha, sweda vaha Rogamargam- Madyama

Nidana: Due to increased use of *guru, snigdha ,amla, lavana ahara*, day sleep, sedentary habit and lack of exercise.

Sampraptthi: Due to this *kapha, pitha, mamsa, medas* aggravate excessively. All of this obstruct the *gathi* of *vayu* and carries *ojas* to *vasti* and causing *madhu meha*

Diagnostic Assesment

Based on presenting complaints, physical examination, systemic examination and lab reports, the case was diagnosed as DPN

Therapeutic Interventions

External treatment

Simharambhadi Sarvangha dhara mentioned in *Yogamrutham*

Table 1: Contents

Ingredients	Botanical name	Family	Rasa	Guna	Veerya	Properties
Simharambha	*Musa paradisiaca*	Musaceae	*Kashaya*	*Guru, Rooksha*	*Seetha*	*Kapha pitha hara*
Sathavari	*Asparagus racemosus*	Liliaceae	*Madhura Tikta*	*Guru*	*Seetha*	*Vatha pitha raktajith, sophajith*

Kapikachu moola **(**Here we used *kapikachu choorna* instead of moola due to easy availability)	*Mucuna pruriens*	Fabaceae	*Madhura tikta*			*Vatha pitha kapha rakta jith*
Ikshu moolam	*Saccharum officinarum*	Graminae	*Madhura*	*Guru*	*Seetha*	*Vathapitha hara*
Manda **(clear rice water)**						*Vatha anulomana*

Preparation: Freshly collected raw materials were crushed well. Then along with kapikachu choorna they were mixed in clear rice water and kept overnight. Then next morning they were again mixed and squeezed well and remnants were discarded. Then the remaining liquid is filtered and used for Sarvanga dhara.[14]

Table 2: Oral administration of medicine

	Medicine	**Dose**
First 7 days	*1.Nishakathakadi kashayam* *2.Chandraprabha vati* *3.Guluchyadi kashayam* *4.Kaisora guggulu* *5.Vaiswanara choornam*	60ml bd before food 1-0-1 with *kashayam* before food 60ml bd before food 1-0-1 with *kashayam* (No:3) 1 tsp with hot water before food at noon
Next 7 days	*1.Nishakathakadi kashayam* *2.Siva Gulika* *3.Guluchyadi kashayam* This medicine was advised to continue for another 15 days.	60 ml bd before food 1-0-1with *triphala kashaya* before food 60 ml bd before food

RESULT

There was significant improvement in the symptoms and quality of life which was assessed by relevant tools like MNSI[15] , DNS[16] , and TCSS[16] scores before and after treatment.

Table 3: MNSI (Michigan Neuropathy Screening Instrument)

MNSI ITEMS	BT	AT	SCORING
Appearance of feet	1	1	0- Normal, 1- Abnormal
Ulceration	0	0	0-Absent,1-Present
Ankle reflexes	1	0.5	0-Present, 0.5-reduced, 1-absent
Vibration perception	1	0.5	0-Present, 0.5-reduced, 1-absent

BT- Before treatment. AT-After treatment

Table 4: DNS (Diabetic Neuropathy Symptom Score)

Symptoms	BT	AT	SCORING
Unsteadiness on walking	1	0	1-Present 0-Absent
Numbness	1	0	1-Present 0-Absent
Burning sensation, aching pain, tenderness in legs and feet	1	0	1-Present 0-Absent
Pricking sensation	1	0	1-Present 0-Absent

BT- Before treatment. AT-After treatment

Table 5: TCSS (Toronto Clinical Scoring System)

SYMPTOMS	BT	AT	SCORING
Pain	1	0	1-present, 0-absent
Numbness	1	0	
Tingling	1	0	
Weakness	1	0	
Ataxia	0	0	
Upper limb symptoms	0	0	

REFLEX SCORE			0-normal, 1-reduced, 2-absent
Right knee	2	1	
Left knee	2	1	
Right ankle	2	1	
Left ankle	2	1	
SENSORY TEST SCORE			0-normal, 1-abnormal
Pinprick	1	0	
Temperature	1	0	
Light Touch	1	0	
Vibration Sense	1	1	

Table 6: Comparative outcome of assessment scores

Name of the score	Before Treatment	After Treatment
MNSI	3	2
DNS	4	0
TCSS	16	5

After 15 days patient was evaluated. Improvements noted in the symptoms were maintained during this period also.

DISCUSSION

Diabetic Peripheral Neuropathy is the damage of nerves occurring as a result of uncontrolled diabetes.It is the most common and debilitating complication that occurs in nearly 50% of patients with diabetes. Early diagnosis and timely intervention can help to reduce the severity and can slow down the progression[17].In Ayurveda chronic stage of diabetes can be correlated with *madhumeha*. Symptoms of DPN can be correlated with *Avarana janya vatha vyadhi lakshanas*. The symptoms are scattered in *poorva roopa*, *lakshana* and *upadrava* stages of *prameha*. In this case report, the patient presented with *rakthavrutha vata lakshanas* such as *supti,suchibiriva nistoda* and *kaphavrutha vatha lakshanas* like *sopha* and *gurutha*. So, the treatment protocol followed here is *Avarana janya vatha vyadhi chikitsa* which includes r*ooksha seka* and in order to attain glycaemic control selected *samana oushadhis* are also given. Here *a sarvanga dhara* said in the context of *prameha chikitsa* in *Yogamrutham* is used as external procedure. The contents include *Simharambha, Satavari, Kapikachu, Ikshu moola* and *Manda*. *Simharambha* is *kapha pitha hara, rooksha, raktha dosha hara* in nature. This may help in removing the *avarana* and improving the circulation. Studies show that it is also effective in diabetes.*Satavari* is *seetha veerya, vatha pitha raktha jith*, and *sopha hara* .So it has anti-inflammatory action, thereby reduces the swelling. It is also a good nerve tonic. *Kapikachu* is *vatha pitha kapha hara* and *rakta dosha hara*. It acts as a nerve tonic and is used in many neurological disorders. *Ikshu moola* is *vatha pitha hara* and has action in circulation also. *Manda* is *vatha anulomana*, *laghu* and it helps in providing *mriduthwa* of *srotas*. *Samana oushadhis* given here are *Nishakathakadi kashayam* with *Chandraprabha vati*. Studies shows that this combination is effective in the management of blood sugar level. *Nishakathakadi kashaya* has *vatha kapha hara* properties and *Chandraprabha vati* is effective in *kapha vatha dosha*[18]. *Guluchyadi kashaya* has anti-inflammatory, antioxidant and immune-modulatory action. It balances *tridoshas* and it detoxifies body and improves functions of liver and kidneys. It has *agni deepana*, *ama pachana* properties and acts on *kapha pitha* condition. It’s main content *guduchi* is found to be effective in *prameha*[19]. *Kaisora guggulu* is indicated in *prameha*. It is *tridosha hara*, *rakta prasadaka*, *sroto sodhaka* and *rasayana* in nature. These properties can help in improving the circulation, act as anti-inflammatory and can maintain the health of the skin.[20] *Vaiswanara choorna* is *deepana* and *pachana* in nature, can correct the *agni* in *dhathu* level also. It can act as *shotho prasamana* which shows its anti- inflammatory property[21]. *Shiva gulika* is indicated in *prameha*. Its main content is *shilajathu* and it is said that there is no such disease that which cannot be cured with *shilajathu*. *Shiva Gulika* is having *lekhana*, *chedana*, *durmedohara* and *rasayana* property. *Shiva gulika* given for a long duration is said to be effective in tackling the multiple system involvement of the disease[22]. Patient was advised to follow *pathya ahara*, avoid alcohol, *madhura amla lavana snigdha guru aharas*. Thus, the selected treatment modalities can act on DPN symptoms and can help in attaining control over blood sugar level.

CONCLUSION

Early diagnosis and timely intervention of Diabetic Peripheral Neuropathy can help to reduce the severity and can slow down the progression. So, therapeutic modalities which can control glycaemic level and limit the further progression, may be a great boon to the patient. The present case report documents that *sarvangadhara* and selected *samana oushadhis* are found to be effective in diabetic peripheral neuropathy and thereby effective in improving the quality of the life of patient.

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