International Journal of Health Sciences and Research
Vol.10; Issue: 1; January 2020
Website: www.ijhsr.org
Case Report *ISSN: 2249-9571*

Treatment of a Patient with Diabetic Peripheral Neuropathy Focusing the Role of Panchakarma - A Case Report

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ABSTRACT

Objective: To describe the role of panchakarma for the management of diabetic peripheral neuropathy (DPN).
Background: Interventions of Panchakarma for the management of diabetic peripheral neuropathy (DPN). Panchakarma is intended to relieve the burning sensation and numbness in diabetic peripheral neuropathy (DPN) which is responsible for the involvement of cranial nerves and nerves of upper and lower limb, thoracic nerve.
Case description: The patient was a 38 year old male professionally car mechanic with type 2 DM presented with pain and burning sensation over the both upper and lower limbs and posterior thigh pain with occasional cramps, muscle weakness for a period of 6 months and pain increases on standing. Symptoms are typically worse when the patient is standing and walking for a short duration of 1 hour. Patient was having tingling sensation in the both upper and lower limb. There were other neurological deficits associated with other attributable symptoms like paraesthesia, numbness and hypoesthesia.
DPN is a mixture of neurological symptoms and muscular symptoms. It is very often overlooked in clinical practice. The typical presentation may be related to multitude of chronic disorders like diabetes. The diagnosis of DPN requires a good clinical skill like understanding in detail about the anatomy and physiology of pancreas and carbohydrate metabolism. Sometimes it is also known as *Pani Pada daha in madhumeha in the context of prameha.*
A holistic approach for the diagnosis requires a detail history of Diabetes in relation to neuropathic pain syndrome. Distal symmetrical peripheral neuropathy is the commonest accounting for 75% of diabetic neuropathy.

Key words- Diabetes, Prameha, Hyperglycemia, Panipada Daha, Hyperglycemia, Peripheral Neuropathy.

INTRODUCTION

The simple definition of diabetic neuropathy "the presence of symptoms and / or signs of peripheral nerve dysfunction in people with diabetes after the exclusion of other causes."

Peripheral neuropathy causes nerve damage caused by high blood sugar and uncontrolled diabetes. It leads to loss of sensation, numbness and sometimes hyposthesic pain in the feet, legs and hands. Around 60-70% of all people with diabetes will develop peripheral neuropathy after some period, although not all suffer from as the pathogenesis tells the nerve damage is not inevitable. Many studies have shown that people with uncontrolled diabetes have a risk of developing severe peripheral nerve

damage which is irreversible in nature. When the nerve is damaged they cannot effectively carry messages between the brain and the other parts of the body. This means the patients of DPN may not feel heat, cold or pain in the feet, legs or hands. Sometimes they are unaware of cut or sore on the foot. The consequences can be life-threatening and infection which won't heal because of poor blood flow causes risk for developing ulcers and can lead to amputation and even death. The nerve damage shows itself differently in each person. Some people feel numbness and some feel tingling then later feel pain. Some people may have numbness especially in fingers and toes. These changes occur slowly over a period of years. So the patient might not even notice it. The changes in the nerve are subtle and happen as people get older, people tend to ignore the signs and symptoms of nerve damage thinking it is just a part of getting older.

There are treatments which can help or slow the progression of this condition and it can limit the damage.

CASE DESCRIPTION

General demographics: the patient was a 38 year old male who worked as a car mechanic. He also reported that he was a lathe machine worker. Apart from his current symptoms, the patient had a 6 year history of type II diabetes mellitus.

History of presenting condition:

The patient was initially examined by a general physician and diagnosed as Diabetic peripheral neuropathy. After a week's treatment with analgesics and muscle relaxants, Gabapentin, Vitamin B-12 injection, the pain, numbness, touch sensitivity and muscle weakness did not subside. Then he consulted a diabetologist who advised to go for NCV of both upper and lower limbs, HbA1C. NCV reports suggested peripheral neuropathy of diabetic origin. This patient had a typical feature of pain in both upper limbs and lower limbs, tingling in the feet, legs and hands, weakness of the muscles, burning sensation in the feet and palm, prickling sensation. On examination, muscle power in both upper and lower limbs 3/5, loss of sensation in both palms and feet, and for score Michigan Neuropathy Screening Instrument was used. a score of >= 7 was considered abnormal. HbA1C was 8.2 indicates poor control.

Synonyms:

Peripeheral neuropathy, distal symmetrical peripheral neuropathy.

Differential diagnosis Screening:

Autonomic neuropathy, mononeuropathy, Radiculoplexus neuropathy,

Posology:

The following drugs are used in this case.

1) Lasunadi Vati(500 milligram)-2-0-2 after food for a period of 45 days.

2) Bala Guduchyadi Taila (quantity sufficient)

Procedures:

The patient had taken Lasunadi Vati 500 mg twice a day for a period of 45 days. Along with oral medication, patient underwent Abhayanga (oleation), Bala Guduchyadi Taila for a period of 45 days Swedana (sudation) with) nadi swedam prepared with dasamoola kwatha.

Outcomes:

The patient was re-evaluated in every 15 days interval after the initiation of treatment for a period of 45 days. The treatment was done with Lasunadi Vati. All post treatment assessments were performed.

Neuropathic pain and functional status: The patient's pain score in Visual Analogue scale came down from 8 to 1. He reported a 1/10 pain in his lower limbs, buttocks and posterior thigh muscles during the participation of daily work schedule. Subjectively the patient also reported that he was able to stand, work and sit without any limitation

Muscle strength:

Manual muscle test was done in the both lower limb and it was 4/5 at the level of extensors, abductors and external rotators muscles of limb region.

Dynamic reassessment:

There was a significant decrease in numbness, tingling sensation, cramps,

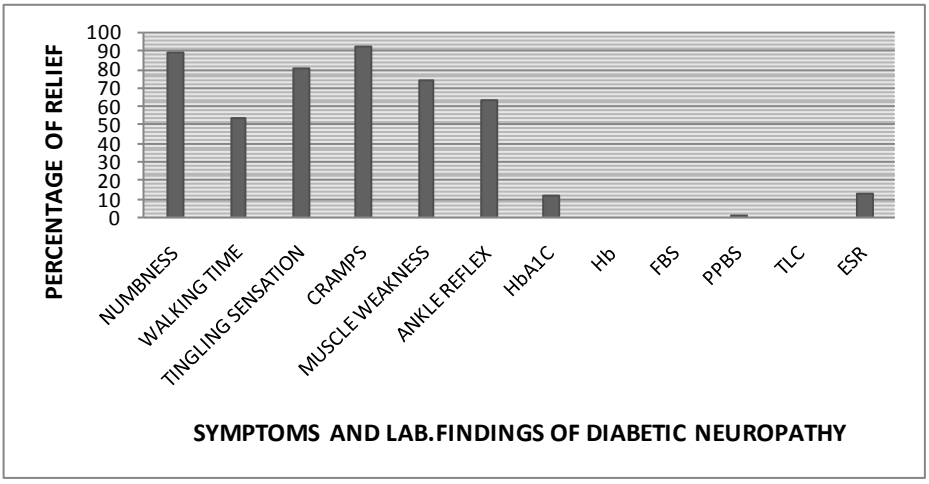
muscle weakness, and significant effect on differentiation of hot and cold, night pain, walking ability.

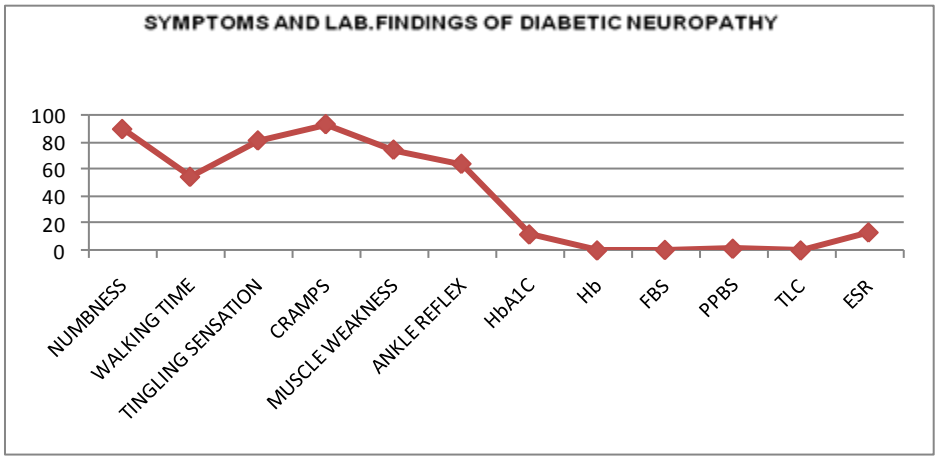
Biochemical reassessment:

There was no substantial change found in the values like Hb%, TLC, DC, ESR, FBS, PPBS HbA1C after 45 days of treatment.

Reassessment of symptoms:

In the subjective parameters like numbness, tingling sensation, cramps, muscle weakness and objective parameters like ankle reflex, great relief of symptoms with reference to Michighan Neuropathy Screening Instrument part-I and part –II.





- For numbness the reduction percentage was 89.7
- For walking time the reduction percentage was 54.5
- For tingling sensation the reduction percentage was 81.3
- For cramps the reduction percentage was 93.3
- For muscle weakness the reduction percentage was 74.5
- For ankle reflex the reduction percentage was 64.1
- For HbA1C the reduction percentage was only 12
- For Hb the reduction percentage was 0.2
- For FBS the reduction percentage was 0.6
- For PPBS the reduction percentage was 1.48
- For TLC the reduction percentage was 0.2
- For ESR the reduction percentage was 13.5

DISCUSSION

The exact cause likely differs for each type of neuropathy. Uncontrolled high blood sugar damages the peripheral nerves and interferes with their ability to send signals, leading to diabetic neuropathy, high

blood sugar also weakens the endothelial cells of the small blood vessels(capillaries) that supply the nerves with oxygen and necessary nutrients.

Present day sedentary life style habits are the cause for increased life style disorders like diabetes, which we can co-relate with prameha in Ayurveda from the symptomatic view. Prameha is included under asta mahagada according to charaka, susruta, vagbhatta.

Initial stage of prameha if not treated then prameha ends with the onset of madhumeha, which is incurable in nature. As per susruta there are two types of prameha explained one is sahaj or congenital and the other one is apathyanimittajanya that is due to faulty life style. As per charaka there are 20 types of prameha where madhumeha comes under vataja prameha. Charaka also describes madhumeha may be jataja prameha (congenital in origin) or santarpana janya prameha (life style disorders)

Because of poor peripheral utilization of glucose it leads to damage of both micro blood vessels and nerve fibers of both upper and lower limbs (vasa nervosa). According to *Ayurveda Madhumeha*, is *Vata Pradhana Vyadhi*. Majority of the peripheral neuropathy symptoms like tingling pain(Toda), loss of sensation (Supatata), gait abnormalities etc; suggest Vata is the predominant Dosha. Lasuna – powerful alleviator of Vata disorders (Lasunah Prabhanjanam).

The major ingredients in Bala Guluchyadi Taila and Guduchi, Bala, Devadaru. All the three ingredients have Vata Shamaka property, Lasunadi Vati, Bala Guduchyadi Taila, Abhyanga & Nadi Sweda(mridu) maybe a right choice in treating Diabetic Peripheral Neuropathy.

Abhyanga

Snehabhyangam is one type of *Bahya Snehana.*

Swedana

By the virtue of Teekshna, Ushna, Snigdha and Guru Gunas; Swedana will counter act the properties of Vata like Rukshata, Sita, Laghuta etc.

Both snehana and swedana administered simultaneously produces synergistic effect on the management of weakness of muscles, cramps, tingling sensation, paresthesia.

CONCLUSION

In this particular case there is a greater relief of symptoms who were administered with Lasunadi Vati along with Bala Guduchyadi Taila massage and Nadisweda (mrudu).

The purpose of this case report was to describe as alternative treatment approach by Ayurvedic method of treatment for diabetic peripheral neuropathy for strengthening of both limbs.

Conflict of interest:

We the authors declare that there is no conflict of interests regarding the publication of this paper in view of financial and other relationships

Abbreviations used in this article:

1. DPN- Diabetic Peripheral Neuropathy
2. DM- Diabetes Mellitus
3. Hb – Haemoglobin
4. NCV-nerve conduction velocity
5. FBS – Fasting blood sugar
6. PPBS – Post- prandial blood sugar
7. TLC – Total leukocyte count
8. ESR – Erythrocyte sedimentation rate
9. HbA1C- Glycosylated haemoglobin

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How to cite this article: Maganti R, P. Yadaiah. Treatment of a patient with diabetic peripheral neuropathy focusing the role of Panchakarma – a case report. Int J Health Sci Res. 2020; 10(1):206-209.

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