

Understanding Diabetic Polyneuropathy as an *Anukta Vyadhi* with an *Ayurvedic* Perspective

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Abstract: Diabetic polyneuropathy is defined as a peripheral neuropathy, either clinically evident or subclinical, that occurs in the setting of diabetes mellitus without other underlying causes. It involves damage to the peripheral nerves, leading to symptoms such as sensory loss, burning pain, tingling, and numbness, primarily in the extremities. In contemporary science, this condition is not directly mentioned as a specific disease entity in classical *Ayurvedic* texts. Therefore, such conditions should be interpreted based on the involvement of *Doshas*, *Dushyas*, *Srotas*, and *Samprapti*. From an *Ayurvedic* perspective, diabetic polyneuropathy can be correlated with the complications of *Madhumeha*, a subtype of *Vataj Prameha*. Long-standing *Madhumeha* leads to *Dhatukshaya* and *Avarana* of *Vata Dosha*, which damages nerve function and results in neuropathic symptoms such as numbness, *Daha* (burning sensation), and *Daurbalya* (weakness).

Keywords: Diabetic Polyneuropathy, *Madhumeha*

Introduction: Diabetic polyneuropathy is one of the most common complications of diabetes mellitus, characterized by symptoms like sensory loss, burning pain, tingling, and numbness. Globally, at least 830 million people have diabetes, and this figure is projected to more than double by the year 2030. In India, the number of affected individuals is approximately 73 million. Furthermore, 12% of global health expenditure is directed toward managing diabetes and its complications.

A voluminous body of literature exists in *Ayurveda* describing the diseases *Prameha* and *Madhumeha*. In *Ayurveda*, *Madhumeha* is classified as one of the four *Vataj Pramehas*. Symptoms seen in diabetic polyneuropathy, such as *Chimchimayana*, *Supti*, and *Hastapadataldaha*, are attributes of abnormal *Vayuvyapara* often observed in *Madhumeha*. *Madhumeha* is a complex disease and has been categorized as a *Mahagada* by the *Acharyas*. The features of *Purvroop*, *Rupa*, and *Updrava* are integral components of the *Samprapti* and are

directly related to the complexity of the ongoing pathogenesis.

Despite its high prevalence and impact on quality of life, diabetic polyneuropathy is not described as a distinct disease entity in classical *Ayurvedic* texts. This necessitates its understanding under the concept of *Anukta Vyadhi*, which refers to conditions not directly explained in classical compendia but interpreted through fundamental *Ayurvedic* principles. *Ayurveda* emphasizes analyzing such conditions based on *Dosha*, *Dushya*, *Srotas*, and *Samprapti*, allowing physicians to conceptualize and manage newly emerging or previously undescribed diseases.

Understanding diabetic polyneuropathy as an *Anukta Vyadhi* provides a rational framework for its diagnosis and management within *Ayurveda*. It enables the application of classical principles such as *Nidan Parivarjana*, *Dosha Pratynik Chikitsa*, and *Rasayana* therapy, which may help in slowing disease progression and improving nerve functions. This integrative interpretation not only bridges the gap between contemporary medical knowledge and classical *Ayurvedic* wisdom but also opens avenues for holistic and individualized patient care.

Aim: To interpret and understand diabetic polyneuropathy within the framework of *Ayurveda* as an *Anukta Vyadhi*.

Objectives:

1. To analyze the involvement of *Doshas*, *Dushyas*, *Srotas*, and *Samprapti* in diabetic polyneuropathy.

2. To correlate modern symptoms of diabetic polyneuropathy with *Ayurvedic Lakshanas*.
3. To provide a rational basis for *Ayurvedic* management through the concepts of *Anukta Vyadhi*.

Material and Methods: This paper is based on *Ayurvedic* classical texts, modern textbooks, and relevant websites and articles.

Observations:

Diabetic Polyneuropathy (Modern Perspective): Neuropathies are the most common long-term complications of diabetes, affecting up to 50% of older patients with type-2 diabetes. Clinical presentations vary significantly, but the most common forms are distal symmetrical and autonomic neuropathies. The precise mechanisms underlying the development of diabetic polyneuropathy are not entirely clear; however, they are likely caused by diabetes-related metabolic or vascular disturbances. These factors are not mutually exclusive and may be interrelated or synergistic. Microangiopathy has been shown to develop early in the disease. Additionally, diabetes mellitus is associated with increased blood viscosity, impaired oxygen release from blood to tissue, and dysfunctional structural alterations of red blood cells, all of which contribute to chronic hypoxia, ischemia, and nerve damage.

Furthermore, high intraneural glucose concentrations can activate several pathways leading to neural dysfunction or cell death, including:

1. Increased reactive oxidative species (ROS) formation due to excess *NAD* and *FADH* accumulation.
2. Excess sorbitol production leading to cellular osmotic stress.
3. Increased hexosamine pathway activation causing a chronic inflammatory response.

Patients typically present with sensory abnormalities, including numbness, paresthesia, and hyperalgesia. These symptoms usually first appear in the feet and may advance to the legs, hands, and more proximal areas over time. Motor system dysfunctions, such as atrophy of the *extensor digitorum brevis* muscle and foot ulcerations, are also common.

Diagnosis and Symptom Classification:

Diabetic polyneuropathy is diagnosed through:

1. Comprehensive foot examination
2. Electromyography
3. *USG*
4. Nerve conduction study

Types of Neuropathies in Diabetes:

1. **Peripheral Neuropathy:** Tingling sensation, burning sensation, pain or cramps, and numbness.
2. **Autonomic Neuropathy:** Weakness, loss of appetite, and bladder or bowel problems.
3. **Proximal Neuropathy:** Wasting, abdominal pain, and severe pain in the hip, thigh, or buttock.
4. **Mononeuropathy:** Bell's palsy, difficulty focusing, double vision, and weakness.

Diabetic Polyneuropathy and Ayurveda:

While diabetic polyneuropathy cannot be directly correlated with any specific *Vyadhi*, most of its *Lakshanas* are present in the *Purvaroop* and *Upadravas* of *Prameha*.

Table 1: Correlation of Symptoms with Ayurvedic Lakshanas

Symptoms of Diabetic Poly neuropathy	Ayurvedic Lakshana	Reference in Classical Texts
Numbness	<i>Suptata, Swapa</i>	<i>Meda-kshaya Lakshana</i>
Burning sensation	<i>Daha</i>	<i>Pitta vriddhi lakshna, Pittavritta Vata, Raktavritta Vata, Prameha Purvroopa</i>
Tingling sensation	<i>Pipilika Nistoda</i>	<i>Mamsavritta Vata</i>
Pain	<i>Shula, Toda</i>	<i>Vataprakopa, Prameha Upadrava</i>
Wasting	<i>Mamsa Kshaya, Karshya</i>	<i>Vata vriddhi lakshna</i>
Weakness	<i>Daurbalya</i>	<i>Mamsa Kshaya Lakshana</i>

In *Ayurvedic* classical texts, symptoms like *Suptata* (numbness) and *Daha* (burning sensation) in the body parts, especially hands and feet, are described as a *Purvaroop* of *Prameha*.

Samprapti Ghatak (Pathogenic Factors):

Based on these similarities, the *Samprapti Ghatak* of diabetic polyneuropathy is assumed as follows:

- **Doshas:** *Vata* (mainly), *Kapha*, and *Pitta*
- **Dushyas:** *Rakta*, *Twak*, *Mamsa*, *Meda*, *Majja*, *Ojas*
- **Agni:** *Dhatvagnimandya*
- **Srotas:** *Raktavaha*, *Mamsavaha*, *Medovaha*, *Rasavaha*
- **Srotodusti:** *Sanga* and *Vimarga Gamana*
- **Udbhava Sthana:** *Hasta*, *Pada*

Discussion: In texts like the *Charaka Samhita*, it is emphasized that not all diseases are explicitly named; instead, physicians should diagnose based on the *Dosha*, *Dushya*, and other factors. Diabetic polyneuropathy is the primary complication of chronic *Madhumeha* (a form of *Vataja Prameha*) presenting *Lakshanas* such as *Dhatukshaya*, *Ojakshaya*, and *Vatprakopa*, leading to neurological degeneration.

The primary *Dosha* involved is *Vata*, which governs nervous system functions and is associated here with *Pitta* and *Kapha Doshas*.

Dushyas involvement is as follows:

- **Rasa:** Impaired nourishment
- **Rakta:** Microvascular damage
- **Mamsa:** Muscle wasting
- **Meda:** Metabolic derangement
- **Majja:** Nerve tissue involvement

Srotas involvement is as follows:

- **Rasavaha Srotas:** Impaired nutrient transport
- **Raktavaha Srotas:** Microangiopathy

- **Majjavaha Srotas:** Nerve degeneration

The Probable Ayurvedic Pathogenesis (Samprapti) is as follows:

- *Hetu sevana* (similar to *Prameha*)
- → *Kapha*, *Meda Vriddhi*
- → Long-lasting *Prameha*
- → *Dhatukshaya*, *Ojakshaya*
- → *Vata Prakopa*, localization in *Majjavaha Srotas*
- → Diabetic Polyneuropathy (*Anukta Vyadhi*)

This pathogenesis leads to various symptoms that can be correlated with *Ayurveda Dosha Lakshanas* as stated above.

Conclusion: Diabetic polyneuropathy, although not explicitly explained in *Ayurvedic* texts, can be understood through the concept of *Anukta Vyadhi*. The main *Samprapti* involves *Kapha* and *Meda Vriddhi*, followed by the obstruction of *Vata* functions, which affects the *Majjavaha Srotas*. Alternatively, *Dhatukshaya* and *Vata Prakopa* also affect the *Majjavaha Srotas*, leading to nerve impairment. This approach highlights the adaptability of *Ayurvedic* diagnostics and aids in treating the condition with *Ayurvedic* remedies.

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