

## A REVIEW ON THE ROLE OF VASTIKARMA IN DIABETES MELLITUS

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**ABSTRACT**

Diabetes mellitus is a clinical syndrome characterized mainly by hyperglycemia due to absolute or relative deficiency of insulin. Lack of insulin affects the metabolism of carbohydrate, protein and fat and causes significant disturbance of water and electrolyte homeostasis. In Ayurveda, it can be correlated as *Prameha*. *Prameha* is mentioned as one of the eight major diseases (*Ashta mahagada*) in *Brihatrayi* (The 3 prime classics of Ayurveda) in *Ayurveda*. *Acharya Charaka* has explained it as a life-style disorder due to over indulgence in heavy and rich nutritious food, day time sleep, lack of exercises, other sedentary habits and not doing seasonal purifications. Now a days, it is very common and prevalent disease affecting about 25% of world population. In Ayurveda, especially *Panchakarma* have a major part to do with prevention and management of Diabetes. As, in this there are some specific purificatory procedures which removes the stagnated, vitiated *Doshas* out of body in a natural way. *Vasti Karma* is one of the most powerful therapy of all the main five procedures of *Panchkarma* and is said to be equal to half of all the treatments, has major role in controlling Diabetes Mellitus hence this is an attempt to explain the control and management of *Prameha* in *Ayurveda* through *Vasti Karma*.

**KEYWORDS:** *Vastikarma, Panchakarma, Prameha, Diabetes mellitus.***INTRODUCTION**

Diabetes word comes from greek word 'diabainein' means 'to pass through' while Mellitus means 'honey-sweet'.<sup>[1]</sup> It is a group of disorders in which there are high blood sugar levels over a prolonged period. Depending upon the etiology of Diabetes Mellitus factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization and increased glucose production. The worldwide prevalence of DM has risen dramatically over past two decades, from an estimated 30 million cases in 1985 to 382 million in 2013.<sup>[2]</sup> India, the country with the second-highest number of people living with diabetes.<sup>[3]</sup> About 25% of the Senior Citizens have become the victim and this percentage may grow more very soon in future, as modern sedentary lifestyle, food habits of the peoples open the door for this disease to Pervade. The World Health Organization estimates that more than 180 million people worldwide have diabetes. This number is likely to more than double by 2030. In 2005, an estimated 1.1 million people died from diabetes. Almost 80% of diabetes deaths occur in low and middle-income countries. Almost half of diabetes deaths occur in people under the age of 70 years; 55% of diabetes deaths are in women. Most notably, diabetes deaths are projected to increase by over 80% in upper-middle income countries between 2006 and 2015.<sup>[4]</sup>

In Ayurveda, *Prameha* is actually a broad term that includes various types and stages developing diabetes mellitus, pre-diabetic symptoms plus its complications. It is included under *Ashtamahagada* (eight type of major diseases) by *Acharya Charaka*<sup>[5]</sup>, *Sushruta*<sup>[6]</sup> and *Vagabhatta*.<sup>[7]</sup> *Prameha* is a *Tridoshaj kapha* predominant disease.<sup>[8]</sup> Its most cardinal symptom of *Prameha* according to *Acharya Sushruta* and *Vagbhatta* is polyuria and physio-chemical abnormality of urine.<sup>[9]</sup> Although *Acharya charaka* has considered sweet urine resembling honey, turbid like characters resemblance with glycosuria in its prodromal symptoms. The incurable form of *Prameha* is *Madhumeha*.

Despite the use of advanced Allopathic drugs for the treatment, use of Ayurvedic/ herbal remedies is gaining higher importance because of Allopathic drugs have drawbacks and limitations like hypoglycaemia, nausea, vomiting, hyponatremia, flatulence, diarrhoea or constipation, alcohol flush, headache, weight gain, lactic acidosis, pernicious anaemia, dyspepsia, dizziness, joint pain etc.

Natural herbs have been highly esteemed source of medicine throughout the human history. Ayurvedic drugs with anti diabetic activity are extensively formulated commercially because of easy availability, affordability and less side effects as compared to the synthetic anti

diabetic drugs. Integrating the theory and modalities of Ayurveda in management of Diabetes Mellitus may prove to be beneficial. Coming to the detoxification part of the Ayurveda i.e. *Panchakarma* there is much more effectiveness rather than using medications. As *Acharya Charaka*, has mentioned the Significance of Evacuative Therapy as Part of General Treatment: *Doshas* might sometimes aggravate even after treatment with lightening and digestion using medications but they will never recur if they are subdued with evacuative therapy. In case of *doshas* as well as plants, if the root is not struck at, reappearance of the gone disorders and sprouts (respectively) is certain.

The accurate and effective proposed *Shodhana* Therapy 'Vasti' explained in the texts if the same could be scientifically and skillfully administered on the patient would herald confidence in both the doctors and patients and usher a 'NEW AGE' in *Ayurveda* System of Medicines. The present study is an attempt to evaluate the beneficial effect of 'Vasti in *Prameha*' and popularize it among the Practitioners and therapists of *Ayurveda*.

#### Etiology According to Ayurveda

The main causes of *Prameha* are taking heavy caloric food with lack of exercise, eating frequently and in excess quantity, *Snigdha* (fatty) and *Guru gunatmak* (difficult to digest) foods like fish, curd, new rice and sweet items, butter, ghee, milk etc. increases *kapha*, *meda* and urine which are the main etiological factors for *Prameha*.<sup>[10]</sup>

#### Main Characteristic Feature

Its main feature according to *Acharya Vagbhata* is *prabhuta* and *avil mootrata* i.e. increased quantity and turbidity of the urine. And this all causes due to vitiated *Kapha dosha*.

#### Pathogenesis According to Ayurveda

*Prameha* is a disorder of *Kapha* predominant *Tridoshaja*. Classics emphasized its pathophysiology by intake of *kaphakara nidaan* that vitiates *Kapha dosha* and gets localized in the urinary bladder, produces *prameha* by vitiating the body water, sweat, *Pitta*, fat, plasma and muscle; even *Pitta* and *Rakta dosha* also produces *prameha* by vitiating the residence of urine (urinary bladder) when vitiated. And even *Vata dosha* vitiation can also cause *Prameha* by dragging the *Dhatu*s (essential elements of the body) into the bladder.

*Kapha dosha* in turn with *Meda dhatu* gets impured. Then *Vata dosha* take body's *Kapha*, *Meda*, *Kleda* and vital elements and passes away through urine.<sup>[11]</sup> which causes increased quantity and turbidity of urine.

*Acharya* has also told *Dhatukshayajanya* and *Avaranjanya Madhumeha*.<sup>[12]</sup> Though *Dhatukshayaja* pathogenesis leads to incurability while *Avaranjanya* pathogenesis can be disrupted. Here in the pathogenesis

etiological factors mainly vitiate *Kapha*, *Pitta* and *Meda*. They inturns obstruct the Patha of *Vata*. *Vyan* the subcomponent of *Vata* mainly perform the functions related to movement and transportation of various vital essences at required place. *Apana Vayu* subcomponent of *Vata* mainly related to the function of *Pakvasaya* and *Basti* i.e. *Dharan* and *Prerana*. Thus in the pathogenesis these both *Vata* played essential role to precipitate the disease *Prameha*. Obstruction to the path of *Vata* leads its provocation causes severe depletion of vital elements. *Oja* carried out towards *Vasti* by *Vyana* and excreted out by *Apanavayu*. Along with this vitiation of various body elements like *Meda*, *Mamsa*, *Kleda*, *Vasa* and *Lasika* occurs which causes various symptom and signs. *Medodosh*a were also manifests as the disease progresses.<sup>[13]</sup> In *Ayurveda* another type of *Prameha* is of 2 types:

- 1) *Sahaj pramehi* i.e. patient will be lean and thin
- 2) *Apathyajanya pramehi* i.e. obese patient<sup>[14]</sup>

#### Importance

The object of this paper is to point out the *Basti* therapy indication in classics in *Prameha* disease. As *Vasti* is not clearly mentioned in the *Prameha chikitsa*, inspite of it *Vamana* and *Virechana Shodhana* therapies are indicated in texts but, it is told as half *Chikitsa* by *Acharya Charaka* in *Siddhi sthana*. Also *Acharya Charaka* has mentioned that there are no as such rules that any therapy is strictly indicated or contraindicated in particular disease, wise doctor can recommend any therapy accordingly to the patient and the environmental conditions. Therefore also *Vasti* can be given in *Prameha*.<sup>[15]</sup>

#### Therapeutic Effects of Vasti Therapy

*Vasti karma* in *prameha* can be of 2 types according to the patient:

As, *Acharya Charaka* has mentioned *Prameha* in *Santarpana Janya Vyadhi* (Disorders due to Over-saturation).<sup>[16]</sup> That basically requires *Shodhana* (detoxification) of body that effectively expels all the vitiated *doshas* of the body. Though *Vamana* (therapeutic emesis) and *Virechana* (therapeutic purgation) are the considered as prime *Shodhana karma* in *Prameha*, but due to non-palatability of pungent smell of drugs and *Kshara* and *Ushna* properties may produce abdominal discomfort, *Vasti* is considered as comfortable line of treatment. Also due to the poor strength of the patient and due to most of the patients are obese this disease we recommend *Vasti* as a safe procedure which expels out *doshas* without giving much stress to the patient.

It evacuates impurity quickly and comfortably, free from incompliant effect and does *Aptarpana/Santarpana* quickly according to the drugs used in it.<sup>[17]</sup> The medicine used in the form of *Basti* acts faster than the oral route, as it works without digestion.

Mainly there are 2 types of *Vasti*:

- 1) *Niruh vasti* which is actually a shodhan vasti and can be administered in avaran janya prameha and obese diabetic patient.
- 2) *Anuvasana vasti* which can be administered in lean and thin patients and sahaj pramehi.

There is lots of research work been done so far in either systems of the medicine but there is no permanent measure in treating *Prameha*. Even during the intake of medications it will be controlled but once the medicine stopped the condition worsens.

In the present study *Basti* is taken with an intension that, *Basti* is *Srestha Vata pacyfying* having the properties like *Laghu* and *ruksha* will majorly help in counter-acting the 10 *drava* and *Snigdha pradhana dushyas* involved in the pathogenesis of *Prameha*. Almost all this prospective the current study is designed to view the “**Effect of Vasti in Diabetes Mellitus**”.

The *Bruhatrayi* and *Laghutrayi* have very lucidly narrated the types and method of treatment for those *Pramehas* and how the negligence and failure to check these *Prameha* leads to emergence of *Prameha*.

#### ***Basti* indicated by Acharya Charaka in Prameha**

*Rasnadi Niruh Vasti*<sup>[18]</sup>

*Saindhavadi Niruh Vasti*<sup>[19]</sup>

*Vidangadi Tail Vasti*<sup>[20]</sup>

*Panchtik Prasaritik Vasti*<sup>[21]</sup> A clinical trial has been done on this<sup>[22]</sup>

*Somavalkal Vasti*<sup>[23]</sup> A clinical trial has been done on this<sup>[24]</sup>

*Katutumbi Vasti*<sup>[25]</sup>

*Mustadi Yapna Vasti*<sup>[26]</sup> A clinical trial has been done on this<sup>[27]</sup>

*Madhutailam Vasti*<sup>[28]</sup> A clinical trial has been done on this<sup>[29]</sup>

#### ***Basti* indicated by Acharya Sushruta in Prameha**

*Rasnadi Niruh Vasti*<sup>[30]</sup>

*Vidangadi Tail Vasti*<sup>[31]</sup>

#### ***Basti* indicated by Acharya Vagbhata in Prameha**

*Pittaghn Mridu Niruh Vasti*<sup>[32]</sup>

*Madhutailik Vasti*<sup>[33]</sup>

*Kaphahara Vasti Kalpa*<sup>[34]</sup>

#### **Mode of Action of Vasti in Diabetes Mellitus**

*Vasti* is invariably beneficial for the treatment of disease involving two, three or all of the *Vata*, *Pitta*, *Kapha* and *Rakta dosha*.<sup>[35]</sup> It actually destroys the disease by cleansing the *Srotas* (micro channels) and by increasing the *Oja*, *Teja*, *Shukra*, *Agni* and *Medha*.<sup>[36]</sup> In *Prameha* there is mainly vitiation of *Kapha*,<sup>[37]</sup> this vitiated *Kapha* in turn affects the *Jathragni* and *Dhatwagni* and disrupts metabolism and produces excess of deranged quality *Rasa*, *Meda*, *Kled*, *Vasa*, *Lasika*, *Mamsa* etc. all this vitiated *Dushyas* (impured vital elements of body)

obstructs the path of *Vata* thus *Vata* because of obstruction get aggravate and changes its path and carries vital *Dhatus* towards *Vasti* and excretes them out Causing depletion. When this *Vata* gets imbalanced in body, it causes major problems. As, *Pakvashaya* (colon) is considered as the significant place for *Vata*. *Basti* is the introduction of herbal decoctions and medicated oils into colon through rectum. It pacifies the vitiated *Vata doshas* by removing the related toxins & waste materials from the system. *Vasti* is having 2 functions -expelling the vitiated *Doshas* (morbid substances/toxins) and nourishing the body. *Vasti Shodhana dravya* have cleansing effect reduces *Avarana* of *kapha* & *meda* etc. in the microcirculation of kidney.

According to modern- in condition of hyperinsulinism diabetic, there is insulin resistance that mostly occurs in obese patients. Due to the excess of growth hormone, there is deposition of adipose tissue in body also. Thus excessive growth hormone and peculiar metabolism both, may be associated with diabetes specially in *Kaphaj Meha* pathogenesis, the role of *Meda Dhatu* (adipose tissue) is more important, it has been mentioned by *Charaka* that *Bahu Drava Shlesma* mixed with and affects *Meda Dhatu*, which is *Abadha* in nature, this *Meda* has been described to act on muscle tissue increasing the volume of body fluid (*sarir kleda*). In this reference it is more appropriate to mention FFA cycle in the pathogenesis of diabetes mellitus. FFA level is high along with high blood sugar level in patients of diabetics. In them blood glucose level does not fall till the FFA level is get down, on this consideration it has been postulated that, as long as, FFA available in excess it is utilized in energy metabolism in place of glucose so the glucose entry is retarded in the muscle cells even with the availability of sufficient amount of insulin Hence it may be concluded that this action of FFA be treated as insulin antagonism thus excess of FFA alone is capable to produce diabetes. The source of FFA is *Meda Dhatu* (adipose tissue). Triglyceride insoluble form of fat fit for deposition i.e. *Badha Medas*. Growth hormone mainly stimulates and maintain the growth of the body. This action can be correlate with the *Shleshmic* activity in the body. So, we can easily understand the role of *Bahudrava Shleshma* responsible for lipolysis increasing the fluid *Medas* (FFA) in the pathogenesis. Because of FFA utilized for energy metabolism inside the muscle cells on the other hand retained glucose in the blood being hydremic in nature it retains high amount of water in circulating blood which has been described as *Sarir Kled*. This excess water in blood causes diuresis .That is how the *Sarir Kleda* is converted into urine as described by *Charaka*. Thus *Kaphaj* type of *Prameha* can be well correlated with disturbed glucose -fatty acid cycle leading hyperglycemia and glycosuria. Over secretion of pituitary growth hormone plays important role in insulin antagonism, both through FA secretion and directly by providing specific inhibitors of insulin action.<sup>[38]</sup>

**Probable Mode of Action of Vasti**

- A. By absorption mechanism
- B. By system biology concept
- C. By neural stimulation mechanism
- D. By excretory mechanism.<sup>[39]</sup>

**A. Absorption** - Mainly *Ushna virya* drugs are used which corrects *Srotasang* i.e. the obstruction existing in the body; assist in regeneration of body tissues. *Vasti* due to its purification - clears *Avarana vata* and normalises function of *Vyan & Apan vata*. Normalized *Vata dosha* is the igniting factor for any disease process and *Basti* therapy is the most effective treatment for disorders arising from abdominal *Vata* as well as systemic *Vata*.<sup>[40]</sup> Thus active principles of drugs used in *Basti* get absorbed in systemic circulation.

**B. By System Biology concept** - The latest concept of system biology makes this clearer how *Basti* can act on the various systems. This theory believes that all the organs are interconnected at molecular level. Any molecular incident is transformed at cellular level, then tissue level and ultimately at organ level. Each molecule of the body is in contact with another molecule of body directly or indirectly, if we alter the pathophysiology at one level results into changes in pathophysiology at another level.

**C. Neural Stimulation Mechanism**- As per recent advancement intestine not only is highly vascular but also highly innervated organ which forms 'Enteric Nervous System' (ENS). ENS may works in synergism with Central Nervous System of body through vagus nerve. The cleansing action of *Basti* is related with the facilitation of excretion of morbid substances responsible for the disease process into the colon, from where it is evacuated.

**D. By Excretory Mechanism** - *Niruha Basti* is hyper osmotic solution which causes movement of solvent from cells of colon to the lumen containing *Basti Dravya* facilitates the absorption of endotoxin and produce detoxification during elimination. *Kalka* used in the *Basti* has got irritant property along with other ingredients which may induce colonic distention. The distention stimulates pressure which produces evacuatory reflex. The sigmoidal, rectal and anal regions of large intestine are considerably better supplied with parasympathetic fibers than other part of intestine; they are mainly stimulatory in action and function especially in defecation reflexes. A volume of about 100 cc of gas is estimated to be present in the tract which is readily expelled by *Basti*.<sup>[41]</sup>

**DISCUSSION**

As India has the largest Diabetes population in the world with an estimated 41 million people, amounting to 6% of the adult population it is really a matter of concern to all

alternative medicinal experts. *Ayurveda* can contribute a real milestone treatment with regular purification of body with advantageous *Panchakarma* procedures. As the etiology of disease is chronic hence *Shodhana Purvaka Shaman Chikitsa* is better than *Shamana Chikitsa*. As only *Shamana Chikitsa* is not able to correct long lived vitiation of *doshas* and break whole pathogenesis. Many researches prove *Vasti* a better treatment modality for *Avaranjanya Madhumeha* because of the drugs used in it acts against the *Kapha, Meda* and *Kleda* and *Sneha* helpful to normalize *Vata* which is the main controlling factor of entire body.

It is the need of hour to work out a compressive approach for number of disease. Diabetes mellitus is one of such disease where a lot of work still needs to be done for complete cure. In a search to meet the above aim, a sincere effort has been done in present review article to revise an integrated approach for better control and cure of above disease. After a thorough review of both the literatures, it can be said that modern science though effective in its approach to stimulate insulin secretion and control insulin resistance finds it hard to control the pathology in number of cases, which is evident from continuous rising toll of diabetic patients.

**CONCLUSION**

Ultimately the present article is mainly aimed to evaluate the efficacy and indication of different *Vasti* therapy in Diabetes mellitus (*Prameha*), to explore the role of *Vyan* and *Apan vayu* in the pathogenesis of *Prameha*. *Vasti* can be given in *Prameha* and it should be practiced according to indications, as told by *Acharyas*. Hence, more research is needed in this aspect.

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