

## Ayurved Management of Diabetes Melitus: A Case Report

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### Abstract

**Introduction:** Diabetes mellitus is a metabolic disorder involving carbohydrate, protein, and fat metabolism resulting from absolute or relative insulin deficiency and resulting in chronic hyperglycaemia with micro and macro vascular complications. Type 2 diabetes is a chronic illness that has major long-term implications for individuals suffering from the disease as well as the health-care system as a whole. Modifications in diet, exercise, and lifestyle are all important factors in successful treatment of type 2 diabetes and are incorporated into the ancient Indian medicinal practice of Ayurveda.

**Diagnosis & Outcome:** This article includes a case study from All India Institute of Ayurveda, New Delhi, from the kayachikitsa department that details the specific traditional intervention used in a patient, bringing her HbA1c from a level of 11.10 to 8.2 over the course of 3 months along with significant reduction in lipid profile with marked improvement in general weakness and controlled weight loss after treatment.

**Conclusion:** Patients with type 2 diabetes mellitus must go through the treatment modalities available in complementary and alternative therapies. Awareness of such modalities is necessary for effective patient counselling and care. From this case it can be concluded that traditional therapeutic intervention helps in possible reduction of HbA1c in the management of Type 2 Diabetes mellitus & can be helpful for the successful management of similar cases.

**Keywords:** Virechana, Rasayana, Madhumeha, HbA1C

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### Introduction

The global burden due to diabetes is mostly contributed by type 2 diabetes which constitutes 80% to 95% of the total diabetic population. The estimates by the International Diabetes Federation (IDF) shows that 285 million adults (20-79 years) were affected by the disorder in 2010. Epidemiological trends indicate that without proper control and prevention, its prevalence will increase further to 438 million in 2030. This accounts a global increase by 54%, i.e., an increase from a

prevalence of 6.6% to 7.8% in 20 years. Nearly 70% of the people with diabetes live in developing countries; the largest numbers are in the Indian subcontinent and China. The largest numbers with diabetes are in the 40-59 age groups which are expected to rise further. By 2030, there will be more diabetic people in the 60-79 age groups.

Many case reports have shown the use of traditional medicine such as Ayurveda as

being beneficial and even curative to a number of chronic illnesses including but not limited to arthritis, low back pain, hypertension, sciatica, migraine, neuropathy, parkinsonism, thyroid imbalances, liver disease, dysmenorrhea, polycystic ovarian syndrome, irritable bowel syndrome, asthma, allergies, eczema, depression, anxiety, and many others.[1] The use of Ayurveda in type 2 diabetes, a chronic, yet treatable disease, has shown marked improvement on patient outcomes in numerous case reports.[2] Type 2 diabetes involves a lack of sensitivity to insulin and the subsequent inability of the body to regulate blood glucose level.

Overtime, high blood glucose has major complications, including damage to the heart, blood vessels, kidneys, eyes, peripheral nerves, digestive system, wound healing ability, and sexual response and leads to complications during pregnancy. A small reduction in hemoglobin A1c (HbA1c) of less than 1% has been shown to have a clear association with improved patient outcomes regardless of treatment with Western pharmaceuticals or alternative and complementary medicine.[3] Because both the cause and treatment of type 2 diabetes are related to diet and lifestyle, the ancient medicinal practice of Ayurveda, which is rooted in diet and lifestyle, is a promising traditional approach to the treatment of type 2 diabetes.

#### **Patient information:**

In March of 2021, a 25-year-old female presented to All India Institute of Ayurved Hospital, after the diagnosis of elevated blood sugar levels with fasting blood sugar 336 mg/dl, Post prandial blood sugar 370 mg/dl and HbA1c 11.10% [Figure 1] at the time, her symptoms included weight loss, lethargy, blurred vision, reduced concentration, and burning sensation of the bilateral feet. she was first diagnosed with type 2 diabetes. Her symptoms gradually

developed and worsened in severity over the course of last 1 year. she had been prescribed oral agents for the management of his blood sugar levels by the allopathic physician who made the diabetes diagnosis, which she took for 1 month prior to visit All India Institute of Ayurved. In march 2021 she had taken certain ayurved medicines including Nisha amalaki churna 3gm along with trikatu churna 2gm bid, sudarshan churna 2gm bid, samsamani vati 2tab tid, jamun beej churna 2gm along with gudmar churna 2gm for a period of 3 month. After 3 month of treatment there was no such marked improvent in reduction in blood glucose level neither it was significantly decreased nor increased, fasting blood sugar found to be 290 and post prandial blood sugar was 320 after 3 months. Then considering it as bahudosa avastha patient is adviced to undergone shodhana therapy and from 9/7/21 she was advised to take deepana pachana medications for 4 days, snehapana for 5 days then abhyanga swedana followed by virechana, after that within a period of 15 days HbA1c level eventually reduced from 11.10% to 8.2%.[Figure 2] with significant improvement in subjective symptoms like improvement in general weakness and controlled weight loss. she was able to taper off the oral allopathic medications due to controlled blood glucose level during the course of the treatment.

#### **Clinical findings:**

On examination there was no pallor, icterus, clubbing, cyanosis, lymphadenopathy, or oedema, her weight was 48 kg, blood pressure was 110/75mmhg, and pulse rate was 80/min, Temperature- 99.5 F<sup>0</sup>. Personal history revealed regular bowel and bladder movement along with good appetite and sleep. Her menstrual cycle was normal. Systemic examination revealed normal heart sound without any other significant findings. Chest examination revealed normal breathing sound. She was well

conscious and oriented suggesting normal higher functions with intact sensory and motor systems.

**Table 1:** shows clinical symptomology of the patient on the timeline recorded from before treatment, during treatment and after treatment.

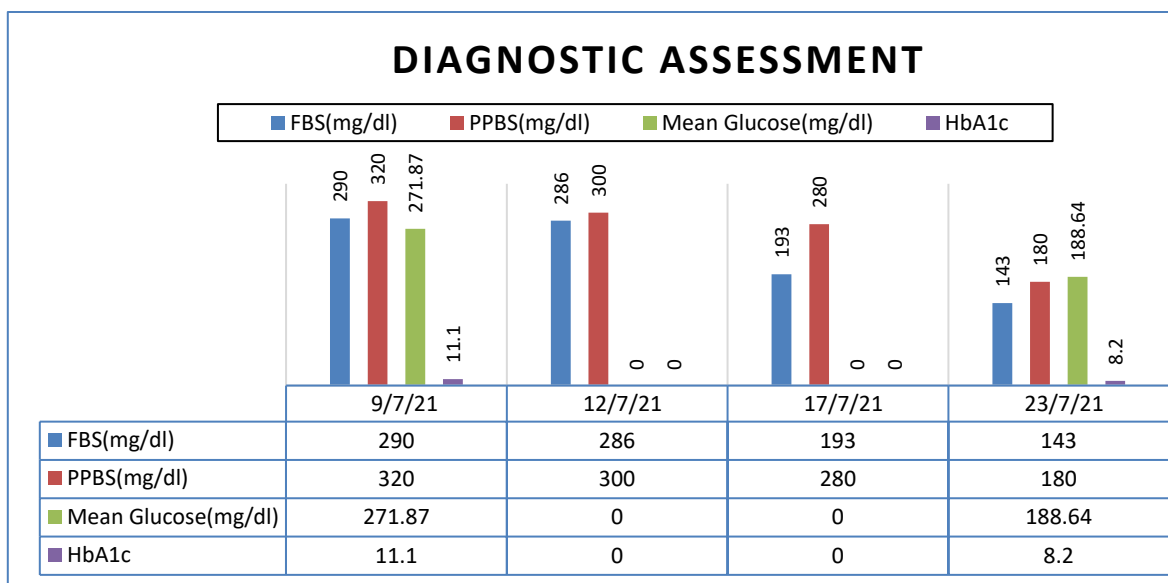
**Time line:**

**Table 1: Symptoms Assessment Chart**

Clinical outcome measures	9/7/21	12/7/21	17/7/21	23/7/21
Coating of tongue	Present	Absent	Absent	Absent
Lethargy	Present	Present	Absent	Absent
Loss of concentration	Present	Present	Present	Reduced
Burning sensation in feet	Present	Present	Reduced	Absent
Blurred Vision	Present	present	Present	Reduced

**Table 2: Diagnostic assessment**

Lab Investigation	9/7/21	12/7/21	17/7/21	23/7/21
<b>FBS(mg/dl)</b>	<b>290</b>	<b>286</b>	<b>193</b>	<b>143</b>
<b>PPBS(mg/dl)</b>	<b>320</b>	<b>300</b>	<b>280</b>	<b>180</b>
<b>Mean Glucose(mg/dl)</b>	<b>271.87</b>	-	-	<b>188.64</b>
<b>HbA1c</b>	<b>11.10</b>	-	-	<b>8.2</b>



**Figure 1: Diagnostic assessment**

**Table 3: Blood sugar level during deepana pachana**

Date	Fasting Blood Sugar(mg/dl)	Post Prandial Blood Sugar(mg/dl)
9/7/21	290	320
10/7/21	298	330
11/7/21	288	300
12/7/21	280	310

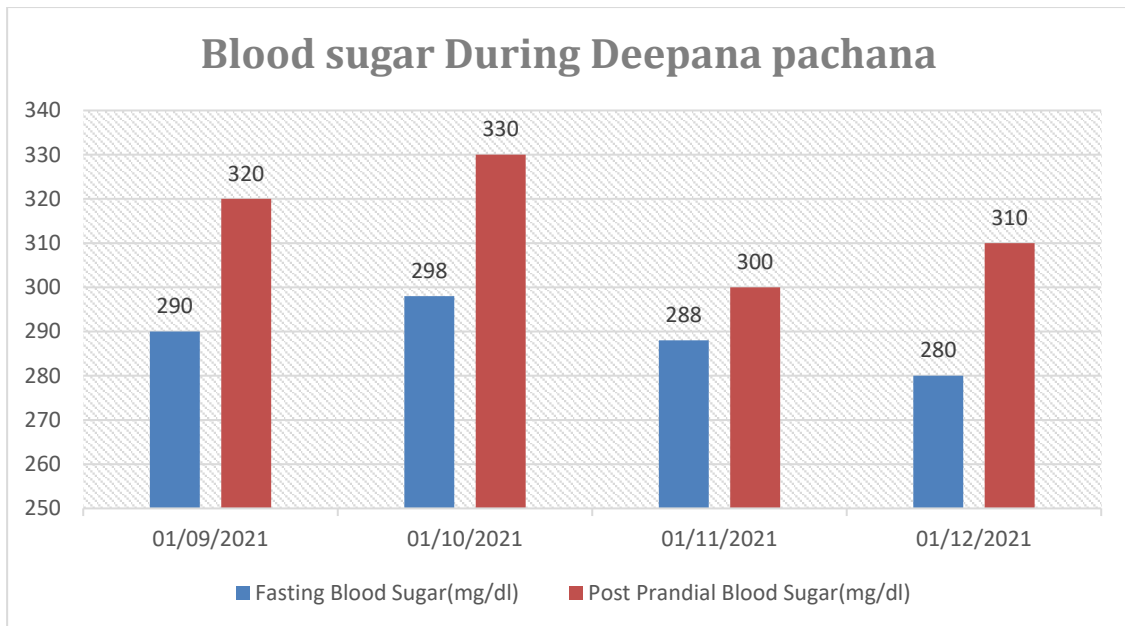


Figure 2: Blood sugar during deepana pachana

Table 4: Blood sugar level during snehapana

Snehapana	Fasting Blood Sugar(mg/dl)	Post Prandial Blood Sugar(mg/dl)
Day 1(13/7/21)	286	300
Day 2(14/7/21)	211	288
Day 3(15/7/21)	249	300
Day 4(16/7/21)	193	280
Day 5(17/7/21)	177	240

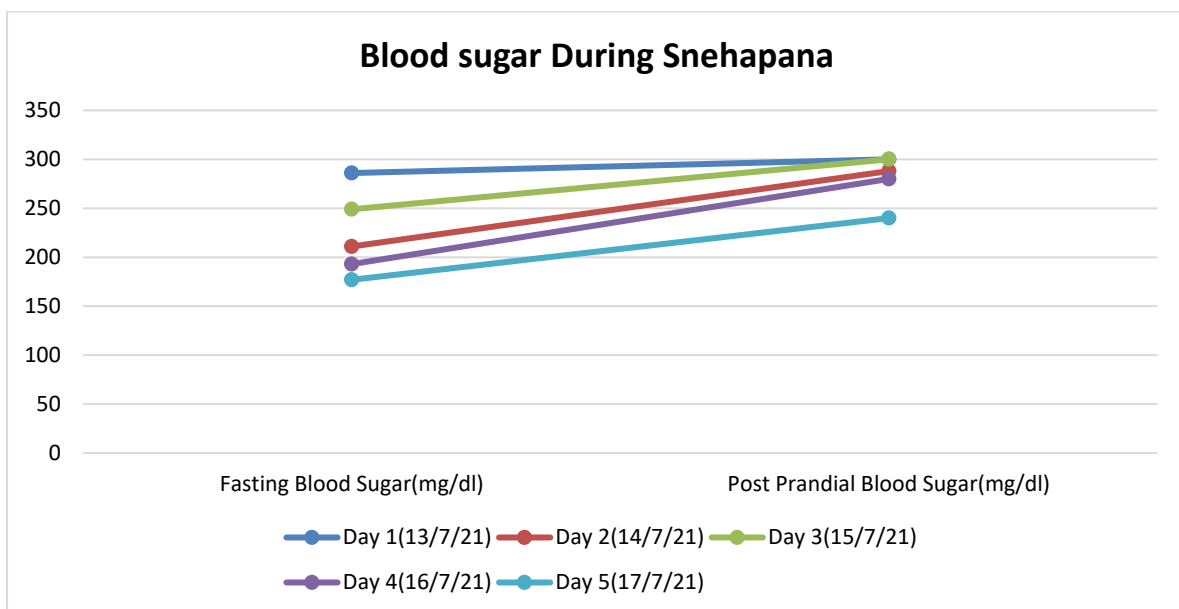


Figure 3: Blood sugar during Snehapana

**Therapeutic focus & Assessment:**

After assessment of the ama lakshana deepana pachana medications along with

light diet was advised, for this Nagarmotha churna 3gm along with Trikatu churna 2gm was selected. After 4 days of deepana

pachana ama lakshana gets disappeared. Then snehapana was done for 5days with panchatikta ghrta, initially it was 40 ml after assessing the agni bala and deha bala, then on day 2 it was 90 ml, on day 3 it was 150ml, on 4<sup>th</sup> day it was 200ml and on 5<sup>th</sup> day it was 250ml. after that samyak snigdha lakhana was attained. then sarvanga abhyanga was done for 2days with tila taila and vaspaswedana with dashamool kwath. Then virechana given with trivrit avaleha 70gm, kutki churna 10gm, triphala kwath 100 ml. Patient had a total number of 17 virechana vegas, after that considering it as madhyama sudhi peyadi samsarjana karma was planned for 5 days where she was advised to take peya, vilepi, krita akrita yusa as per the classical reference.

**Rasayana Therapy (rejuvenation therapy):** After completion of treatment, patient was given Amalaki churna before food with luke warm water for *Rasayana* in the dose of 3gm/ daily for 3 months.

**Observations and Outcome:**

Subjective assessment was done after each karma i.e after deepana pachana, after snehapana and after virchana. After deepana pachana there was complete absent in coating on tongue. After snehapana there was reduction in lethargy, blurred vision, loss of concentration, numbness in feet, after virechana there was complete absent of lethargy, blurred vision, numbness in feet with improvement in concentration. Fasting blood sugar (FBS) reduced from 336mg/dl to 280mg/dl, Post prandial blood sugar (PPBS) reduced from 370mg/dl to 300 mg/dl after deepana pachana. FBS reduced to 177mg/dl and PPBS reduced to 240mg/dl after snehapana. After virechana FBS reduced to 143mg/dl and PPBS reduced to 180mg/dl, HbA1c reduced to 8.2 and Mean Plasma Glucose level reduced from 271.87mg/dl to 188.64mg/dl.

Figure 1(Before Treatment)

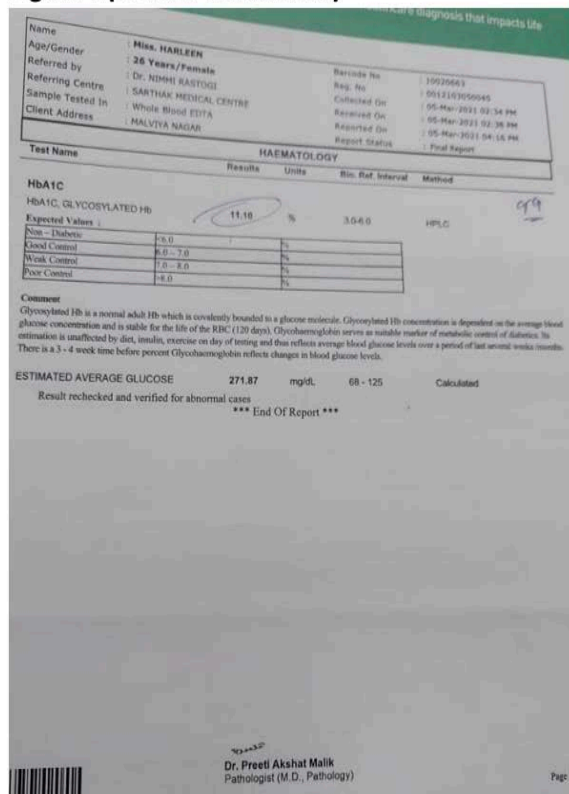
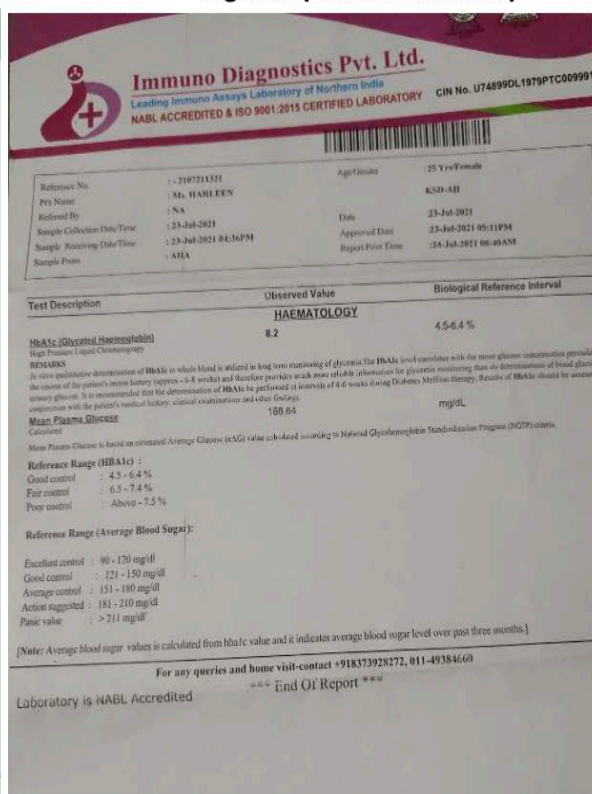


Figure 2(After Treatment)



**Discussion:**

In Ayurveda, DM type 2 can be correlated with Madhumeha. According to Ayurvedic texts, DM and all Pramehas (urinary disorders) start with the derangement of kapha that spreads throughout the body and mixes with fat (Meda) that is similar in physical properties to kapha (mucus). Kapha mixed with fat passes into the urinary system, thereby interfering with normal urine excretion. Vitiated pitta, vata, and other body fluids (malas) may also be involved in this blockade. This blockade is believed to be the cause of frequent urination observed in DM. Madhumeha is a disease in which urine of the patient is sweet like honey and quantitatively increased as well as astringent, pale and rough (ruksha guna) in quality and the whole body of Madhumehi becomes sweet[3]. Madhumeha may not be described precisely in Ayurveda, but it points in the direction of the current knowledge about the disease with respect to neurological damage and insulin (Ojas) malfunctioning at the production (degeneration of islets of Langerhans in the pancreas) or at the utilization levels. The involvement of tissues (dushyas) leading to blood vessels, kidney, eye, and nerve damage is also described in Ayurveda as major complications. DM is described not only as a condition of Madhumeha (sugar loss in urine), but also as a condition of Ojomeha (immunity and hormone loss) in Ayurveda for the purpose of treatment. Ayurvedic therapies generally provide relief without any adverse effects even after prolonged administration. Following are the body constituents that are mainly involved in the pathogenesis to precipitate the disease Madhumeha.

On the basis of various references, the Samprapti Ghataka of Madhumeha are described as follows

**Srotasa:** Mutravaha, Udakavaha, Medovaha

**Srotodushti:** Sanga, Atipravritti **Agni:** Vaishamya of all Agnis (or Dhatvagnimandya) **Adhithana:** Basti, **Ama:** Medogata (Ama produced due to Jatharagni mandya and dhatwagni mandya)

**Dosha: Kapha:** Bahu and Abaddha – in Avaranajanya Madhumeha, Kshina – in Kshayajanya Madhumeha

**Pitta:** Vriddha – in Avaranajanya Madhumeha, Kshina – in Kshayajanya Madhumeha

**Vata:** Avrita – in Avaranajanya Madhumeha, Vriddha – in Kshayajanya Madhumeha

**Dushya:** Rasa, Rakta, Mamsa, Meda, Majja, Vasa, Shukra, Oja, Lasika, Kleda[4] and Sweda[5].

Virechana is one of the Panchakarma therapies wherein purgation is induced by drugs and it specifically aims at the elimination of excessive Pitta Dosha along with shleshma and other doshas from the body. Vitiated Dosha is the basic factor in the manifestation and progress of any disease. Panchakarma therapy, specifically the Samshodhana like Virechana, is one of its kinds which aims at the elimination of vitiated Doshas from the body so that the disease could be prevented or if the pathology has already established, treated in the most effective manner. As per Ayurveda the, Virechana drug acts in Pachyamana Awastha i.e. the digestion of drug is in progress. Virechana Karma is the act of expelling Doshas through Adhobhaga i.e. Guda[6]. It is less stressful procedure, less possibility of complications and more acceptable to all classes of patients. It is considered the best treatment for morbid and increased Pitta Dosha[7]. Virechana is even a treatment for Pitta Samsargaja Doshas, Kapha Samsrista Doshas and also for Pitta Sthanagata Kapha. It is worth mentioning that Virechana, unlike the modern purgatives, is not merely an act to open the bowel, but is a complete therapeutic measure which has systemic as

well as local effects. Virechana removes aggravated Pitta and clears all channels of body, Jatharagni gets kindled and lightness sets in[8]. Virechana drugs are having Ushna, Sukshma, Vikashi, Teekshna, Vyavayi and Adhobhaga Prabhava properties. These drugs consist of Prithvi and Jala Mahabhootas which are heavy in nature and thus help in expulsion of Dosha from Adhobhaga. They get absorbed and due to Virya it reaches to the Hridaya then the Dhamanias and thereafter it reaches to macro and microchannels of the body. In Madhumeha, the therapeutic efficacy of Virechana karma can be illustrated through two pathways;

- Firstly, Virechana karma removes bahu drava shleshma and pitta from Vayu sthana which leads to Pradeepan of dhatwagni which in turn results in maintenance of Dosha-dhatu equilibrium which is beneficiary for the formation of Uttarottar dhatu and their nourishment. Each and every cell gets nourished through Rasa & Rakta dhatu which enhances the production of essence of dhatus Oja in the body which is responsible for vyadhikshamatva (immunity). Decrement of Oja is the major casualty in Madhumeha which gets corrected through Virechana.

- Secondly, Virechana directly acts on Liver which is the main site of all enzymatic activities thereby increasing the metabolic activity. Thus Virechana corrects the mal-production of glucose in the liver and brings a state of equilibrium thereby suppressing the signs & symptoms of Madhumeha (DM Type 2).

Also it causes Samprapti Vighatana of the disease Madhumeh

**Virechana effect at Dosha level-** Virechana is told as the best treatment of Pitta but it is also a treatment of Kapha Dosha esp. which is situated in Pitta sthana. Kapha Dosha has similar property to that of Meda Dhatu & Kleda, which is major

Dushya involved in the pathology of Madhumeha.

**Effect at Dhatu level-** According to Acharya Charaka, all the Poorvarupa in Prameha roga is due to Meda dhatu pradushti and Acharya Kashyapa mentioned that Shuddhi of Saptadhatu take place with the Virechana karma. Hence in majority of the Dhatu pradoshaja Vikaras, Virechana karma is more beneficial.

**Effect at Ama and Agni-** As it is a disorder arising due to vitiation of Agni mainly, Dhatwagni. Virechana removes Avarana of Vayu in Kosta. It also corrects the Medo Dhatwagni. Therefore, the formation of Uttarottar dhatu is increased, while the formation of Meda & Kleda is decreased.

**Effect at Srotas level -** Mutravaha, Udakavaha, Medovaha Vaigunya are involved in pathogenesis of Madhumeha which will be corrected by Virechana. So, by breaking pathology at Srotas level it pacifies the disease.

#### **Conclusion:**

Diabetes Mellitus Type 2 can be co related to Prameha and Madhumeha described within the topic "Prameha". This disease is clearly explained in Ayurveda. Virechana karma can be highly efficient in relieving sign & symptoms of DM Type 2 by acting at the root level of disease pathology. Thus Virechana can be used for the effective and safe management for cases of DM Type 2.

#### **Patient Perspective:**

The patient was very much satisfied with the improvement in illness. She willingly adopted each and every recommendations and followed throughout her treatment.

#### **Informed Consent**

Informed consent was taken from the patient for this case report, this approach may be useful for clinical practices and further studies on treating Diabetes mellitus type2.

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