



Case Study

MANAGEMENT OF DIABETES MELLITUS (TYPE 2) WITH ANTI DIABETIC AYURVEDIC MEDICINE – A CASE REPORT

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ABSTRACT

Diabetes Mellitus is a metabolic disorder characterized by increased blood sugar level (hyperglycaemia) with or without some classical features- polyuria, polydipsia, polyphagia, burning sensation etc. In Ayurveda diabetes comes under *Prameha*, is one of the 'Ashtau Mahagadas'. It is a *Vatik* subtype of *Prameha* called *Madhumeha*. Some *Madhumehahar* (Anti-diabetic) Ayurvedic herbal medicines are very much effective for managing the day to day diabetic life. The present article deals with a newly diagnosed case of Type 2 DM since 3 Days. Still he was not taking any allopathy medicine. By analyzing the concept of pathogenesis of this patient it was understood that *Kapha- Pittavrit -Vata Dosha* is the chief vitiating factor and other factors like manifestation *Meda, Kleda, Vasa, Ambu* and *Ojas* with *Dhatwagni Mandya* are the co-factor for it. By considering the *Nidana, Dosha* and *Dusya* (factors and co-factor), a judicial combination of Ayurveda drugs- *Jamun- Gudmar- Nagarmotha Sudarshan- Giloy- Nagkeshar- Arjun Churna* was advised to take orally in morning and evening with luke warm water. At the time of consultation his FBS and PPBS was too high i.e., FBS- 366 and PPBS – 614. After taking the prescribed formulation for 3 months his sugar level came down to normal range. Now patient is under supervision of OPD AIIA at fort night interval. The prescribed combination of drugs showed better response in Type 2 DM. Assessment using major Ayurveda parameters for evaluating *Roga, Agni, Deha* and *Chetas, Bala* came down to the normal level.

KEYWORDS: *Madhumeha, Dosh, Dusya, DM, Herbal medicine.*

INTRODUCTION

Diabetes Mellitus (DM) is a lifestyle and metabolic disorder, characterized by multi systemic dysfunction due to elevated blood glucose level. The major forms of diabetes mellitus are classified to those caused by deficiency of insulin secretion due to pancreatic cell (beta cell) impairment. As per WHO, 62.4 million people have been reported to have diabetes and figures are expected to reach 87 million by the year 2030. About 7% (8 crores) Indian Population is diabetic and it is a high alert time for all the medical fraternity to find out prophylaxis and preventive measures to control and cure diabetes and its complications.^[1] As prevention and prophylaxis is the eternal strength of Ayurveda in which there are number of herbs which have beneficial and tremendous effects and are being used as hypoglycemic in homes injudiciously. *Prameha* is a multi-systemic disease caused by the imbalance of *Tridosha* (bio humors), initially mediated through *Kapha* affect urinary system manifest as polyuria. The specificity and variability of different *Nidan* (aetiological factors), *Dosha* and afflicted tissue

(*Dushya*) opposed by body resistance decides the manifestation of multiple variety of *Prameh*. Two terms are used interchangeably in context of diabetes- *Prameha* and *Madhumeha*. Analysis of clinical features of *Prameha* is described in terms of *Dhatu* and *Dushyas* that may or may not be related to diabetes as per modern science. This is because of the fact that most of the *Dhatu* are liable to be vitiated by *Kaphadosha* in *Prameha* finally ending to a *Dhatukshaya* status. Mean time there is chances of vitiation of *Dushyas* by *Pitta Dosha* in *Prameha* leading to high end acute complications. *Dhatukshaya* and chronicity leads to aggravation of *Vata* resulting in *Madhumeha- Vatajaprmeha*. Morbid *Kleda* accumulation in the body is the chief reason along with primary vitiation of *Kapha Dosha*. It has to be understood by the principle of *Dhatwagni Mandhya*. At the same time this *Samprapti* is then associated with other *Doshas* producing either *Kaphavata* or *Kapha Pitta* symptamatology. Both are producing *Dhatu* depletion. The classical symptoms which are presented by patients are- excessive thirst

(Polydipsia), extreme hunger (Polyphagia), frequent urination (Polyuria), weight loss, increased fatigue, irritability, other chronic features (blurry vision, dry, itchy skin, slow-healing sores), numbness or tingling in hands or feet. The principles of management of Ayurveda are *Nidan Parivarjan, Srotosodhana, Pramehahara, Vishahara, Mridusamsodhana, Ojovardhaka, Rasayana*. Ayurvedic classics provide treatment protocol including- Body purification (*Shodhan* therapy), drugs (herbal and herbo-mineral preparations), diet regimen (*Pathya-Apathya*), yoga and exercise which can be safe mode for controlling the blood sugar level in the patient of diabetes mellitus.^[2]

Case description

A 48 years male patient visited diabetes and metabolic clinic (*Kaya-Chikitsa*) OPD, AIIA occupationally he is a shopkeeper; he comes with clinical history as a newly diagnosed case of Type 2 DM since 3 days. Patient had complaints of increased frequency of urination, giddiness, generalized weakness, lethargy, excessive sleepiness and body ache, as advised by one of his friend he got his blood sugar get tested and it was found to be FBS 366mg/dl and PPBS 614mg/dl. Then he was recently diagnosed to be suffering from diabetes mellitus (DM) Type 2 by

an endocrine specialist. The patient sort for the herbal medicines with the hope to get controlled of Blood sugar level and to maintain his health observance this in view, the subject visited and offered himself for the pertinent possibility of administering Ayurveda medicine.

The subject had been put on Ayurvedic herbal medicines for 2 weeks. After 12 days the subject was re-evaluated and seeing the blood sugar level was decreased to FBS 277mg/dl and PPBS 363mg/dl. There after advised to continue the same Ayurvedic treatment for a period of 3 months.

Examination

In AIIA, the patient was evaluated subsequent Ayurveda principle (*Roga Priksha* and *Rogi Pariksha*) described in ancient Ayurveda literature. The clinical documents were re-evaluated by the gold standard of the conventional method of diagnosis (WHO criteria of Type 2 DM). The assessment through Ayurveda method revealed the prominent *Dosha* of the disease to be *Kapha, Pitta, Vata* with *Dushya- Meda, Kleda, Vasa, Ambu* and *Ojas* and the status of *Agni* was *Dhatu- Agnimandya*. The characteristic of *Prakriti* to be *Kapha- Pitta* and *Sthula* in nature. The state of the disease was still in *Kapha* predominance that is individual in the early beginning of its nature.

Table 1: Examination of Patient

General physical examination	Dashvidha Pariksha	Asthavidha Pariksha	Systemic examination
<ul style="list-style-type: none"> • Appetite: Poor • Bladder: 8-9 times in day, 4-5 times in night • Bowel habit: Regular sometimes constipated • Sleep: disturbed (4-5 hrs) • B.P: 130/90mm Hg • Respiratory rate: 20/min • Pulse rate: 78/min (rhythm- N, character- N) • Clubbing: Absent • Lymphadenopathy: Absent • Pedal odema: Absent • Icterus: Absent 	<ul style="list-style-type: none"> • <i>Prakriti: Kapha-Pitta</i> • <i>Vikriti: Vishamsamveta</i> • <i>Saara: Madhyam</i> • <i>Samhanan: Madhyam</i> • <i>Satva: Madhyam</i> • <i>Aharshakti: Avara</i> • <i>Vyayamashaki: Madhyam</i> • <i>Pramana: Madhyam</i> • <i>Vaya: Madhyam</i> 	<ul style="list-style-type: none"> • <i>Nadi: Regular, Kapha- Pitta</i> • <i>Mala: Samanya</i> • <i>Mutra: Parbhut-Aavila</i> • <i>Jihva: Samanya</i> • <i>Sparsha: Samanya</i> • <i>Drika: Samanya</i> • <i>Akriti: Sthula</i> 	<ul style="list-style-type: none"> • Respiratory System: chest bilateral clear, no abnormality detected • Cardio-vascular System: S₁S₂ normal • Gastro-intestinal System: no abnormality detected • Locomotor System: normal • Nervous System: Patient was conscious, well oriented, no abnormality detected

Ayurveda drug Regimen

Initially the patient was administered with anti-diabetic (*Pramehaghna*) herbal drugs to control and to maintain the normal serum blood sugar level. For this purpose, he was advised with a judicious combination of *Jamun Beej (Syzygium Cumini)*, *Gudmar Patra (Gymnema sylvestre)*, *Nagarmotha Churna (Cyprus rotundus)* *Giloy Churna (Tinospora cordifolia)* and *Sudarshan Churna* (a herbal compound) with luke warm water as *Anupan* for accelerating the *Pachan* of drugs.

Table 2: Intervention

Date	Drug	Dose	Frequency	Route And Special Instruction
02/05/2016	1. Jamun Beej Churn	5gm	BID	Oral, Empty Stomach
	2. Gudmar Patra Churn	5gm	BID	Oral, Empty Stomach
	3. Nagarmotha Churn	3gm	BID	Oral, After Meal
	4. Sudarshan Churn	3gm	BID	Oral, After Meal
	5. Tarivrit Churn	5gm	H.S	Oral, After Meal
09/05/2016	1. Jamun Beej Churn	5gm	BID	Oral, Empty Stomach
	2. Gudmar Patra Churn	5gm	BID	Oral, Empty Stomach
	3. Nagarmotha Churn	3gm	BID	Oral, After Meal
	4. Sudarshan Churn	3 gm	BID	Oral, After Meal
	5. Tarivrit Churn	5gm	H.S	Oral, After Meal
16/05/2016	1. Gudmar Patra Churn	3gm	BID	Oral, Empty Stomach
	2. Jamun Beej Churn	3gm	BID	Oral, Empty Stomach
	3. Nagarmotha Churn	3gm	BID	Oral, After Meal
	4. Sudarshan Churn	3 gm	BID	Oral, After Meal
30/05/2016	1. Gudmar Patra Churn	3gm	BID	Oral, Empty Stomach
	2. Jamun Beej Churn	3gm	BID	Oral, Empty Stomach
	3. Nagarmotha Churn	3gm	BID	Oral, After Meal
	4. Giloy Churn	3 gm	BID	Oral, After Meal
11/07/2016	1. Gudmar Patra Churn	3gm	BID	Oral, Empty Stomach
	2. Jamun Beej Churn	3gm	BID	Oral, Empty Stomach
	3. Giloy Churn	3gm	BID	Oral, After Meal
	4. Arjun Churn	3 gm	BID	Oral, After Meal
08/08/2016	1. Gudmar Patra Churn	3gm	BID	Oral, Empty Stomach
	2. Jamun Beej Churn	3gm	BID	Oral, Empty Stomach
	3. Giloy Churn	3gm	BID	Oral, After Meal
	4. Arjun Churn	3 gm	BID	Oral, After Meal

Brisk walking: Continue with the Ayurvedic formulation (45minutes morning)

Observations

At the time of reporting at the diabetes clinic at AIIA, the fasting blood sugar (FBS) and post-prandial blood sugar (PPBS) levels were reported to be 366mg/dL and 614mg/dL. He was not taking allopathy medicine. Then he continued the combination of Ayurveda drugs. After a period of 2 weeks, the FBS and PPBS level were reduced to 277mg/dL and 363mg/dL. After 4 weeks, on reviewing the health condition, the levels of FBS and PPBS were found to be 237mg/dL and 294mg/dL respectively. The patient also reported reduction in the intensity of each of the associated symptoms related to his disease. After 10 weeks, the FBS and PPBS level was reduced to 168mg/dl and 210mg/dl. After verifying the patient's health condition advised to continue the same drug with slight modification of dose. At the end of 3 months the level of FBS and PPBS which was found to be 87 mg/dl and 128 mg/dl. Now patient is taking some Ayurvedic medicine to maintain the blood sugar level.

Table 3: Blood Sugar Level Observations

Date	Blood Sugar Level
30/4/2016	FBS - 366mg/dl
	PPBS - 614mg/dl
14/5/2016	FBS - 277mg/dl
	PPBS - 363mg/dl
26/5/16	FBS - 237mg/dl
	PPBS -294mg/dl
07/7/16	FBS -168mg/dl
	PPBS -210mg/dl
04/8/16	FBS -87 mg/dl
	PPBS -128 mg/dl

RESULTS

Finally patient is satisfied with Ayurvedic medicine and normal sugar level since 3 months. At the end of 3rd month, there was complete relief of each of the symptoms as reported at time of OPD to the Diabetes clinic, AIIA. He has revealed improvement in the quality of life in DM measured in terms of different parameters and has been maintaining the normal healthy condition. The major Ayurveda parameters for evaluating *Roga*, *Agni*, *Deha* and *Chetas-Bala* came to normal level.

DISCUSSION

Diabetes is initially called *Prameha* and when presented with chronicity and classical feature with some or all of the *Purvarupas* called *Madhumeha*.

Most DM patients are prone at age group of 35 to 54 years^[3] and the subject (48years) presented with all the promising causative factors of developing DM. Vitiation of all three *Doshas* is reason for the manifestation of all type of *Prameha*. However *Madhumeh* is classified as *Vataj* type of *Prameha*. Due to *Bahudrava Slesma* predominance and *Kapha-anubandh*, the subject had been diagnosed with *Madhumeha* (DM) at his early stage.^[4] There are so many reasons of diabetes, in which genetic factor is measured to be a most possible cause. Moreover, higher levels of stress can cause the blood glucose to rise, which is supported by various evidence-based studies. Unhealthy lifestyle, stress and imbalanced diet are also the major causes of diabetes.⁵ Various genetic and environmental factors influence insulin sensitivity and secretion.

The main causes of *Prameha* (diabetes) are consumption of excess food having *Ushna*, *Snigdha* and *Guru* nature and lack of exercise. Foods that increase *Medas* and *Mootra*, *Kapha*, are the major factors for *Prameha*. Morbid *Kleda* accumulation in the body is the chief reason along with primary vitiation of *Kaphadosha* has to be understood by the principle of *Dhatwagnimandhya*. At the same time this *Samprapti* is then associated with other *Doshas* producing either *Kaphavata* or *Kapha Pitta* symptomatology.^[6] So that weight of the patient increased found increased at the initial phase of the disease. Ayurvedic practitioners are usually receiving the cases of Type 2 DM after diagnosed from the modern fraternity with some or most *Purvarupa* of *Prameha* with *Prabhuta-Avilamutrata*. Ayurvedic Anti-diabetic herbal drug found as improved hyperglycemic control which respond quickly. *Jamun* Seeds (*Syzygium Cumini*) contains a glycoside, named Jamboline radically decrease serum glucose, insulin resistance, and efficiently enhance β -cell function and pancreatic health, immunity and defense mechanism of body.^[7] Glutathione peroxidase antioxidant

enzyme activities in Type-2 Diabetes mellitus. Due to the high concentration of tannic and gallic acid, it also helps digestion.^[8]

According to Ayurveda literature, *Jamun* is the best *Vatakar*^[9] and *Kashaya* property. *Jamun* owns *Vat-Janana* property and due to *Vat-Kar* effect, it increases the *Kashayata* of involved *Doshas* so that the quantity of liquid production is reduced and thereby reducing the frequency of urination.^[10]

Gudmar Churna (*Gymnema sylvestre*) due to its *Kashaya-Tikata* property^[11] stimulates the secretion of insulin and rejuvenates the process of generating β -cells and producing insulin.^[12]

Nagarmotha (*Cyprus rotundus*) was used to reduce the levels of *Meda* and *Kleda* due to its *Lekhan* and *Samgrahak-Deepan-Pachan* properties.^[13]

Sudarshan Churna (a herbal formulation) reduces *Dhatu Agnimandya* by increasing *Dhatu Agni* due to its *Tikta rasa pradhanta* its *Tikta Rasa*. *Tikta Rasa* possesses *Deepana-Pachan-Kleda-Meda-Lekhan-Vasa-Lasika-Sweda- Mutra-Slesma-Pita Avash*^[14] property of accelerating the process of *Sroto-Shodhan* (removing the obstructions) along the dominant pathway. *Sudarshan Churna* helped in reducing the glucose level in blood and urine.

After maintaining the normal blood sugar level, *Sudarshan Churna* was replaced by *Giloy churna* (*Tinospora cordifolia*) and *Arjun* (*Terminelia arjuna*) to manage the linked symptoms, viz, stress at the working place, uneasiness, loss in lustre, fear. *Giloy* with its *Tridosha-Saman* property^[15] increases immunity (*Bala*) and thereby decreases *Oja Vikriti* ultimately improving the quality of life in DM as mentioned by *Susruta* that *Oja* is the *Karana* and *Bala* is the *Karya*.^[16] In 3 months of treatment and follow up patient physically and mentally feels healthy.

When we see the assessment of *Roga Bala* and *Rogi Bala*, it was found that patient get complete relief from the symptoms related to the disease and improvement in the quality of life. Patient had advised for brisk walk after the assessment of exercise tolerance and patient get benefit of that with these oral medications.

CONCLUSION

The beginning observations may indicate an apparent method for receiving rid of managing Type 2 DM by Ayurvedic Anti-diabetic herbal drugs. The study accomplished that the Ayurvedic formulation *Jamun Beej Churna*, *Gudmar Patra Churna* *Nagarmotha Churna*, *Sudarshan Churna* and *Giloy Churna* is an effective medication for the early diagnosed Type 2 DM patient . This may guide to a useful method for maintaining the normal blood

sugar level as well as the quality of life and preventing diabetes complications. Further study is needed in more number of cases to generate clinical evidence.

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