



## Case study

### Ayurveda: A world where diabetes can do no harm

Rashmi Tokas Rana\* and Raja Ram Mahto

Department of Kayachikitsa, All India Institute of Ayurveda, New Delhi- 110076, India

\*Corresponding author. E-mail: [rashmi.tokas88@gmail.com](mailto:rashmi.tokas88@gmail.com); Phone: +91-9013644080.

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#### ABSTRACT

The acceptance and inclination of people towards so-called westernization have lead the human into a great trap of lifestyle-related disorders like diabetes. An alarming increase in the incidence of diabetes is an issue of great concern worldwide. India has turned out to be the diabetic capital of the world. The whole world is having an eye over Ayurveda with a hope to provide a better standard of living. A 65-year old aged person came to the OPD of All India Institute of Ayurveda (AIIA) with the complaints of frequent urination, generalized weakness, tingling sensation, etc. markedly high blood sugar levels and no such associated complications. He had a sitting job profile of long-hours duration and had a sedentary lifestyle. The patient was examined using all Ayurvedic parameters and WHO criteria as well. After a thorough examination, he was diagnosed as diabetic or *stoola pramehi* with *kaphapittaja prakriti* for the very first time. He was prescribed with traditional Ayurvedic medications as mainstream therapy without any other system of medicine. He is on Ayurvedic treatment for the last 2 years. Significant reduction in the blood sugar levels was noted and the quality of life improved to about three times with the ongoing Ayurvedic medicines and the dietary regimens mentioned in the classics. Presently, the patient is living with a good and appreciable standard of health. The immense commercial potential of Ayurvedic science and its three-dimensional approach towards maintaining health in the physical, mental and spiritual plane attracted the highly stressed western population who have reached the saturation point of emotional, physical and moral insecurity. Ayurveda has been constantly struggling to keep pace with the growing craze of its own people towards westernization.it can prove to be the most effective therapy to reduce the financial burden of lifestyle disorders like diabetes in future.

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#### INTRODUCTION

Diabetes is a condition that impairs the body's ability to process blood glucose. There are three major types of diabetes, type 1, type 2, and gestational diabetes. If the body fails to produce insulin, the condition is known as type 1 diabetes. It is sometimes also called juvenile diabetes. People with type 1 diabetes are insulin-dependent, which means they must take artificial insulin daily to stay alive. On the other hand, if the body still makes insulin, unlike in type 1, but the cells in the body do not respond to it as effectively as they once did, this condition is called as type 2 diabetes.

According to the National Institute of Diabetes, type 2 is the most common type of diabetes and it has a strong link with obesity. When diabetes develops in women during pregnancy and the

body can become less sensitive to insulin leading to gestational diabetes (Nall, 2018).

#### PREVALENCE AND EPIDEMIOLOGY

In 2017, approximately 425 million adults (20-79 years) were living with diabetes; by 2045 this will rise to 629 million. The proportion of people with type 2 diabetes is increasing in most countries, 79% of adults with diabetes were living in low- and middle-income countries. The greatest numbers of people with diabetes were between 40 and 59 years of age (212 million), still, so many people with diabetes were undiagnosed. Diabetes caused 4 million deaths every year. Diabetes caused at least 727 billion dollars in health expenditure in 2017, in which 12% of total spending was recorded on adults. In addition, 352 million people were at risk of developing type 2 diabetes (IDF, 2017).

## CASE STUDY

A 65-year-old male patient came to OPD of All India Institute of Ayurveda (AIIA) with major complaints of frequent urination, generalised weakness and tingling sensation for the last two months. The patient had a high affinity for taking sweets and oily food items. He had a sedentary lifestyle as he is a shopkeeper. He was diagnosed as diabetic for the first time.

According to the patient, he was asymptomatic before two months. Gradually he noticed an increased frequency of urination, along with generalised weakness and tingling sensation in palms and feet. He also complained of constipated bowel. So he came to AIIA for management and care. 40 years back, he had a history of pulmonary kochs for which he took allopathic treatment from Mehrauli, New Delhi for a period of 18 months (until he was declared free from pulmonary kochs).

### Examination

All the routine investigations were carried out to rule out any other systemic illness and complications like CBC with ESR, LFT, KFT, Lipid profile and TFT. Specific investigations such as blood sugar fasting and postprandial, HbA1c (considered as per WHO criteria) and urine r/m.

After a thorough examination of all Ayurvedic parameters such as *roga bala pariksa*, *agni bala*, *deha bala*, *chetas bala pariksha*, the patient was diagnosed as diabetic or *sthoola pramehi* with *kapha pittaj Prakriti* (Acharya, 2001).

It has been recorded that the patient has no H/O associated systemic illness. The family history revealed that the mother of the patient was a type 2 diabetes sufferer. Other important information collected were G.C. (fair), B.P. (110/78 mmHg), P.R. (80/min), weight (66 kg) and height (158 cm).

### Dashvidha Pariksha

<i>Prakriti:</i>	<i>kapha pittaj</i>
<i>Vikrati:</i>	<i>prakriti sam samveta</i>
<i>Sara:</i>	<i>mansa sara</i>
<i>Samhanan:</i>	<i>madhyama</i>
<i>Pramana:</i>	<i>madhyama</i>
<i>Satmya:</i>	<i>madhyama</i>
<i>Satva:</i>	<i>madhyama</i>
<i>Vyayam shakti:</i>	<i>avara</i>
<i>Vaya:</i>	<i>vridhdhavastha</i>
<i>Bala:</i>	<i>avara</i>
<i>Aahara shakti:</i>	<i>avara</i>

### Initial findings

According to the initial report, the patient has fasting blood sugar of 329 mg/dl, the postprandial blood sugar of 407 mg/dl and HbA1c value of 13.2%. The frequency of urination was 8-10 times in a day and 4-5 times at night. Besides, the patient

has a serious complaint of generalised weakness, tingling sensation, constipation and weight loss.

### Treatment

The combination and the choice of medicines play a crucial role and that should always be kept in mind at the time of treatment. The treatment was started with selected Ayurvedic medicine as per the schedule is given below. The patient was asked to strictly follow the given *pathya apathya* chart together with and regular yoga practice.

#### From the first day to 2 weeks

Jamun beej choorna	3 gm bd
Phaltrikadi kwath	10 gm bd
Sudarshan choorna	3 gm bd
Nagarmotha choorna	3 gm bd

#### From the third week to 2 months

Jamun beej choorna	3 gm bd
Phaltrikadi kwath	10 gm bd
Sudarshan choorna	3 gm bd
Nagarmotha choorna	3 gm bd
Gudmar patra choorna	3 gm bd

#### From the third month to 5 months

Jamun beej choorna	3 gm bd
Giloy choorna	3 gm bd
Brihat yakridari loha	2 bd

#### From the sixth month to 8 months

Jamun beej choorna	3 gm bd
Arogyavardhini vati	1 bd
Panchguna taila	1/a

#### From the ninth month to 12 months

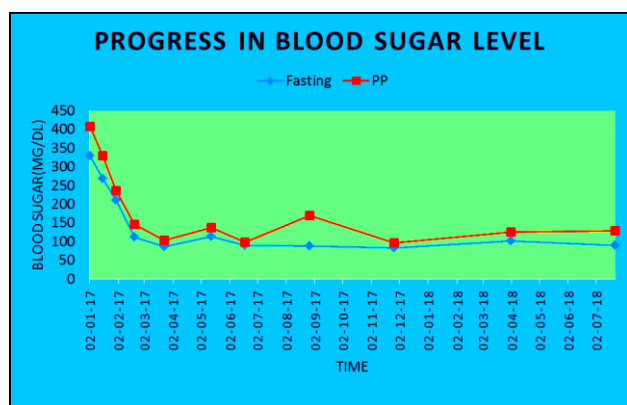
Jamun beej choorna	3 gm bd
Sudarshan choorna	3 gm bd
Amla choorna	3 gm bd
Panchguna taila	1/a

### Observations

Patient started to respond from the first week of treatment. Gradually, the complaints and the blood sugar levels reduced. Significant improvement was noticed after 1 month of treatment. Quality of life was getting better day by day as the patient was able to carry out the activities of daily living on his own and that too very actively. The progress in fasting and PP sugar levels is given in Fig. 1.

### RESULTS

The results of the present study revealed that the patient was considerably normalised the blood



**Fig. 1.** Progress in Fasting and PP blood sugar levels

sugar together with other symptoms. After treatment, the fasting blood sugar was recorded as 90 mg/dl whereas PP sugar was found to be 129 mg/dl. The value of HbA1c was reduced to 7.5%. In addition, the frequency of urination was reduced to 3-4 times a day and 0-1 time at night. Other symptoms like generalised weakness, tingling sensation, constipation and weight loss was improved after treatment (Table 2).

#### Assessment criteria

The symptoms were assessed on the basis of a proforma as given in Table 1. The quality of life was assessed on the basis of the WHO quality of life (SF 36) questionnaire.

**Table 1.** Assessment criteria for the symptoms

Symptoms	Score	Grade	Grading criteria of symptoms
<i>Prabhuta Mutrata</i> (Polyuria)	0	Absent	3-5 times per day, nil or rarely at night
	1	Mild	6-8 times per day, 1-2 times per night
	2	Moderate	9-11 times per day, 3-4 times per night
	3	Severe	>11 times per day, >4 times per night
<i>Kshudhaadhikya</i> (polyphagia)	0	Absent	As usual/routine
	1	Mild	Slightly increased (1-2 meals)
	2	Moderate	Moderately increased (3-4 meals)
	3	Severe	Main meals -2 to 3, light snacks >5 /day
<i>Pipasaadhikya – gala talu shosha</i> (polydipsia)	0	Absent	Normal, ( 1.5-3 liters /day )
	1	Mild	Increased but the frequency of water intake may be controlled (3-4 litres/day)
	2	Moderate	Increased intake and increased thirst (4-5 litres/day )
	3	Severe	Very much increased with the very frequent intake (> 5 litres/day)
<i>Daurbalya/shrama</i> (exhaustion/ tiredness)	0	Absent	Can do routine exercise/work
	1	Mild	Can do moderate exercise with hesitancy
	2	Moderate	Can do mild exercise only, with difficulty
	3	Severe	Cannot do even mild exercise
<i>Suptaangta/daaha</i> (Polyneuritis- numbness, tingling, burning soles)	0	Absent	No numbness in palm and foot
	1	Mild	In-continuous numbness in palm and foot
	2	Moderate	Continuous numbness in palm and foot, but bearable and not severe
	3	Severe	Unbearable numbness in palm and foot
<i>Pindikodveshtan</i> (Cramps while walking/calf muscle pain)	0	Absent	No cramps
	1	Mild	Cramps after walking more than 1 km
	2	Moderate	Cramps after walking ½ km
	3	Severe	Inability to walk even ½ km
<i>Vibandha</i> (Constipation)	0	Absent	Stool passes as per normal schedule
	1	Mild	Passes stool with strain, sometimes takes purgative
	2	Moderate	Passes stool after more than 24 h, frequently takes purgative
	3	Severe	Passes stool after a gap of 1 day, normal purgatives do not work
<i>Alasya</i> (Lethargy) sayaya asan swapan sukhescha (the tendency of excessive sleep and fatigue)	0	Absent	Doing satisfactory work with proper vigor and in time
	1	Mild	Doing satisfactory work with late initiation, likes to stand in comparison to walk
	2	Moderate	Doing unsatisfactory work with late initiation, likes to stand in comparison to stand
	3	Severe	Doing unsatisfactory work with very late initiation, likes to lie down in comparison to sit

**Table 2.** Comparison of before treatment (BT) and after treatment (AT)

S.N.	Parameters	BT	AT
1	FBS	329 mg/dl	90 mg/dl
2	PPBS	407 mg/dl	129 mg/dl
3	HbA1c	13.2%	7.5%
4	Frequency of urine	3	0
5	Generalized weakness	3	0
6	Tingling sensation	3	0
7	Constipation	3	1

## DISCUSSION

The patient was of *kapha pittaj prakriti* and had a sedentary lifestyle. He used to sit for long hours of duration as he is a shopkeeper by profession. He did not do any physical workout and exercises and had a high affinity towards sweet food items and milk products. All this led him into the trap of deadly disease diabetes which can be correlated to *prameh* in Ayurveda (Sharma and Dash, 2016). The medicines chosen for the treatment were wisely chosen from the wide variety of medicines available in the pharmacy.

Jamun beej choorna is very effective in the reduction of frequency of micturition due to its stambhana and kleda shoshak properties. It also helps in digestion due to the presence of tannic and gallic acid (Jagetia, 2017). Jamboline, which is the main glycoside present in jamun is very effective for the pancreatic health, immunity and defence mechanism of the body (Ayyanar and Subash-Babu, 2012).

Phaltrikadi kwath is one of the key Ayurvedic medicines which improves the gastric emptying time (Tripathi, 2002). It is a proven hepatoprotective medicine as it has the capacity of hepatocellular regeneration, cholegogue and choloretic activity, membrane stabilizing and antioxidant effect. It enhances enzyme and metabolic corrections (Srivastava, 2015).

Sudarshan choorna has got the properties of *deepan pachan lekhan kleda meda vasa lasika sweda mootra pitta shlesma avashoshan* which removes the obstruction of the dominant pathways facilitating the process of *srotoshodhan*, which in turn stimulates the insulin receptors in the cell walls and promotes its entry into the cells (Tripathi, 2007; Singh et al., 2011). The lekhan sangraha deepan and pachan properties of Nagarmotha reduce the level of kled which is the chief component in the pathology of *prameh* according to Ayurveda (Sharma and Dash, 2016).

After three weeks, Gudmar patra choorna was added in the treatment as it possesses Kashaya and tikta properties and helps in the stimulation of

insulin secretion (Liu et al., 2009). After a period of three months, Nagarmotha choorna was stopped and giloy choorna was added. The antidiabetic action of giloy has been cited in the Ayurvedic Pharmacopeia of India (2001). It has been mentioned as *pramehagna*, *pramehhara*, *mehagna* and *mehahara* in various Nighantus and Ayurvedic texts (Acharya, 2008).

*Arogyawardhini vati* contains *kutaki* which is a potent *pitta rechaka* which helps in the bile secretion and further facilitating the process of digestion and improving the liver function (Kumar et al., 2013).

## CONCLUSION

The present study is based on a case report of a single patient. The treatment protocol can further be applied on the large number of diabetic patients in future to get a statistically significant data. Hence, Ayurveda can come up as a mainstream therapy for the treatment of diabetes and for the improvement of quality of life of the patients.

## CONFLICT OF INTEREST

Authors declare no conflicts of interest.

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