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Role of Ayurveda Treatment of Type 2 Diabetes Mellitus: A Case Report

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ABSTRACT: -

Background: A 49-year-old woman having earlier history of type 2 diabetes with a random sugar level of 323 mg dLG1.

Methodology: On the basis of pathology reports, The doctor prescribed metformin HCl (1000 mg) with glimepiride 2mg BD and tenegliptin (20 mg) once a day to patient, even after 7 years, patient complaining to blood sugar raised and doctor advised her for insulin injections.

Results: The above treatment was not found satisfactory for the patient, as there was problem in maintaining the sugar level. However, after starting Ayurveda treatment with *Chandraprabha Vati*, *Aamalaki Rasayana*, *Madhumehari Churna* and *Pathya Ahara - Vihara* followed by yoga practice and morning walk, the patient started to recover very fast and within one month, she achieved better results in blood sugar level.

Conclusion: The Ayurveda treatment can be considered as most effective because of its ability to control blood sugar level and also having fewer side effects as compared to that of allopathic medicines.

Keywords: *Aamalaki Rasayana*, *Chandraprabha Vati*, *Madhumehari Churna*, Genetic factor, Hyperglycaemia, *Yoga*.



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INTRODUCTION

Diabetes Mellitus (DM) is one of the most leading chronic, heterogeneous and life – threatening diseases and today it has spread to every region of the globe. In 2019, an estimated 1.5 million deaths were directly caused by diabetes.^[1] The prevalence of diabetes mellitus will be 5.4% by the year 2025, with the global diabetic population reaching to 300 million.^[2] In a diabetic patient, frequent urination, increased hunger and thirst, decreased body weight, blurred vision, itching and tiredness are common symptoms.^[3] Diabetes, particularly type - 2 is associated with various cardiovascular diseases such as ischemic heart diseases and stroke and it is the major cause of non-traumatic blindness and renal failure.^[4] Nowadays, there are a lot of options available to treat type - 2, diabetes with the help of various anti-hyperglycemic medications, such as insulin, sulfonylureas and metformin. Although, these drugs have ability to reduce blood sugar level but the recommendation of one class of anti-hyperglycemic agents or a certain combination to treat complications of diabetes is still difficult.

Ayurveda, a science of living has ability to treat diabetes in various ways like diet planning, exercise and *yoga* practice; as good lifestyle, healthy food and exercise will always remain effective in the management of diabetes.

This case study is discussed based on the treatment of type 2 diabetes with the help of both allopathic and Ayurveda medicines in which Ayurveda treatment were found more effective.

CASE REPORT

A 49-year-old Indian woman was diagnosed with type 2 diabetes (hyperglycemia) having history of diabetes since 7 years with a random sugar level of 323 mg dLG1 as measured by a blood glucose monitoring device (Accu - Chek instant, Roche Diagnostics GmbH, Germany). She already taken allopathic medicines but didn't get better relief even doctors advise her for insulin injections so she came here for better treatment.

She was suffering with other problems like generalised weakness, pain in calf muscles, sleeplessness, mood swings, pricking sensation in eyes. In the next day observation, the Fasting (F) blood glucose level was found to 278 mg dLG1 and Post Prandial (PP) glucose level was measured to 320 mg dLG1.

She is taking teneligliptin (20 mg) at breakfast time and metformin HCl (1000 mg) with glimepiride (2mg) twice a day before meal and Atorvastatin (10mg) once in a day since 5years. As per measurement, her weight was 68 kg, height 161 cm, Body Mass Index (BMI) 26.23, waist 94 cm, hip 101 cm, pulse rate 110 bpm and blood pressure was 140/90 mm Hg. After 3 days, the HbA1c value was found to 9.9% (a range between 4 and 5.6% is normal, between 5.7 and 6.4% indicates increased risk of diabetes and 6.5 or above indicates diabetes).

Ashta Sthana Pariksha:

1. *Nadi – Vatapitta* 110/min.
2. *Mootra – 8 - 9 times /day and 2-3 times / night*
3. *Mala – 1 time / day*

4. *Jivha* – uncoated
5. *Shabda* – *Spashta*
6. *Sparsha* - *Samanya*
7. *Drika* - *Samanya*
8. *Akrati* – *Sthula*

After examining all the reports and earlier prescription, I advised a 30 days course to treat diabetes in which prescribed *Chandraprabha Vati* two tablets (250mg each tablet) three times a day, *Aamalaki Rasayana* 250mg with *Madhumehari Churna* 3gm twice a day at least half an hour before meal) and *Karela*, *Bilva patra swaras* (25 ml early

morning empty stomach) . Also focused on *Pathya Ahar - Vihar*, in which *Kapalbhati*, *Pranayam*, *Mandukasana* advised mandatory *Yoga* practice for 30 min and morning walk for 60 min daily and chapatti of mix flour (Barley, Soybean, Fenugreek, Gram and wheat).

Pathyapathya: For dietary changes, the patients were asked to stop sugar completely. She was also made to curtail the use of energy-rich foods like rice, potatoes, fried foods, and bakery products. Chapatti of mix flour (Barley, Soybean, Fenugreek, Gram and wheat) was mandatory.

Table No. 1: Laboratory data of the patient with reference values of tests before and after treatment.

Examination	Observed value Before treatment	Observed value After treatment	Unit	Reference range
Hb%	11.8	11.5	Gm/dl	11 – 13
Blood sugar (F) (PP)	278 320	124 154	mg dLG ¹	70 - 110 110-140
Blood urea	18	16	mg dLG ¹	10 – 50
Serum creatinine	0.8	0.7	mg dLG ¹	0.7-1.5
Serum Calcium	9.9	10.2	mg dLG ¹	8.7-11
Phosphorus	4.3	4.3	mg dLG ¹	3.5-5.5
Serum uric acid	4.5	4.3	mg dLG ¹	2.8-5.7 (Female) 3.8-7 (Male)
Serum cholesterol	161	156	mg dLG ¹	<200
Serum triglycerides	85	98	mg dLG ¹	<150
Serum HDL cholesterol	58	42	mg dLG ¹	32-65
Serum LDL cholesterol	120	102	mg dLG ¹	100-190
Serum VLDL cholesterol	17	18	mg dLG ¹	10-30
TSH	4.3	4.5	μIU mLG ¹	0.5-4.70

HDL: High density lipoprotein, LDL: Low density lipoprotein, VLDL: Very low density

lipoprotein and TSH: Thyroid stimulating hormone.

RESULTS

After one month of treatment, a blood test report shows improvements. This was showing remarkable improvement in blood sugar i.e. fasting blood sugar 124 mg dl^g and post prandial blood sugar was 154 mg dl^g^[5]. There was relief in generalized weakness and muscular pain. As per patient, now she was able to do her routine work and nowadays she was completing her sleep too.

DISCUSSION

After 30 days treatment with *Chandraprabha Vati*, *Madhumahari Churna*, *Aamalaki Rasayana*, *Karela*, *Bilva patra swaras* and *Yoga* practice with *Pathya Ahara - Vihara* 'a reduction in blood sugar level fasting 278 to 124 and post prandial 320 to 154 mg dl^g was seen'. Many other improvements were seen in other symptoms like weakness, body ache, sleeplessness.

Chandraprabha Vati has glucose and lipid lowering effect. This medicine mainly purified *Guggulu* and *Shilajatu*. *Chandraprabha* (*Karpura*), *Vacha*, *Musta*, *Maricha*, *Pippali*, *Haridra* and majority of drugs has *Katu*, *Tikta*, *Kashaya* and *Madhura Rasa* and main *Guna* is *Laghu*, *Ruksha*, *Tikshna* and *Ushna* mostly effective in *Kapha* and *Vata Dosha*. According to pharmacodynamics actions *Raktaprasadana* (help to purifying the blood), *Shothahara*, *Krimighna* and *Rasayana* action.^[6]

In *Madhumehari Churna*, Most of the drugs are having *Ushna Virya*, *Katu Vipaka* and *Vata-Kaphahara* properties. *Chitraka* acts as a *Deepana Pachana* drug, thus reduces *Ama* at both *Dhatuvagni* and *Jatharagni* level. *Jambubeeja*, *Haridra*, *Daruharidra*, *Musta*, *Haritaki*, *Bhibhitaki*, *Meshashringi*, *Vijaysara*, *Karvellaka* due to their *Laghu-Ruksha* properties reduces *Kleda* in the body that in

turn corrects the *Dhatushaithilya*. Most of the drugs in the formulation are having *Tikta-Kashaya Rasa* which reduces *Madhurya* in the *Rasa*, *Rakta* and other *Jaliya Dhatu*.^[7]

Aamalaki Rasayana works as antioxidants to diabetic is able to prevent the development of retinopathy and also retinal metabolic abnormalities postulated to be involved in the development of retinopathy. Studies in humans suggested that antioxidant therapy with vitamin C might normalize diabetic retinal hemodynamic.^[8]

Pancreatic cells may be rejuvenated and pancreatic β -cell sensitivity may be increased by the alternating abdominal contractions and relaxations involved in yoga practice. Improved blood supply to muscles may enhance insulin receptor expression in the muscles, causing increased glucose uptake. The abdominal pressure created during exhalation in *Kapalbhati* improves the efficiency of β -cells of the pancreas.^[9]

Anuloma Viloma Pranayama (alternate nostril breathing) has been shown to yield significant improvements in components of health-related fitness (i.e. cardiorespiratory endurance, flexibility, and percentage of body fat).^[10] Yoga effectively reduces stress, thereby helping diabetes control.^[11]

Yava is having *Kashayarasa*, *Rukshaguna* which reduces the excess *Kleda* from body by its *Shoshana* effect. *Lekhana Guna* of *Yava* makes *Medodhatu Vilayana*, which helps in reducing *Medodusti* and beneficial in obesity. Due to *Pureeshavardhaka* property it acts as *Doshanulomana*.^[12]

Karela is a potent antioxidant, anti-inflammatory and hypoglycemic agent. *Karela* prevents the damage and helps in the formation of new β cells in the pancreas. *Karela* lowers the blood glucose level by increasing insulin secretion and glucose utilization.^[13] The main constituents of *Karela* (*Momordica charantia*) which are responsible for the anti-diabetic

effects are triterpene, proteid, steroid, alkaloid, inorganic, lipid, and phenolic compounds. Charantin is a typical cucurbitane-type triterpenoid in *Karela* and is a potential substance with anti-diabetic properties.^[14] *Karela* is one of the most commonly used vegetable that contains polypeptide-p and is used to control diabetes naturally. Polypeptide-p or p-insulin is an insulin-like hypoglycemic protein, shown to lower blood glucose levels in gerbils, langurs and humans when injected subcutaneously.^[15]

Bilva is effective as insulin in restoration of blood glucose and body weight to normal levels. The leaf juice of *Bilva* was effective in diabetes mellitus and possibly it was due to presence of bioactive components, aegelin 2, scopoletin and sitosterol in the leaves.^[16]

CONCLUSION

Use of Ayurveda medicines i.e., *Chandraprabha Vati*, *Madhumahari Churna*, *Aamalaki Rasayana*, *Karela*, *Bilva patra swaras* and *Yoga* practice with *Pathya Ahara - Vihara* was found effective to control blood sugar. This alternative treatment can be considered as most effective because of its ability to control blood sugar level and also having fewer side effects as compared to that of allopathic medicines.

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