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CASE REPORT

AYURVEDIC MANAGEMENT OF DIABETES MELLITUS: A CASE STUDY

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Summary

With the rising socioeconomic standards, Diabetes mellitus is becoming country's fastest growing disease burden over 16 years to 2016. Acc. To WHO, India had 69.2 million people living with diabetes in 2015 and by 2030, nearly 98 million people in India may have type 2 diabetes. Scientists are still continuing to develop impr-oved treatment options to give people with diabetes the best possible quality of life. Recognising the potential of ayurveda for treating metabolic diseases, the present clinical study was done in which patient of diabetes Mellitus was managed with ayurvedic formulations. The drugs were given in adequate doses for 3 months along-with pathya (SATH.2) ahara (SATH.1) vihara (dietary advice and day regimen)(SATJ.58). Follow up was done after every 1 month. The patient showed marked improvement with the ayurvedic drugs. So it was concluded th at thedrugs selected have very good hypoglycemic activity so can be used in the treatment of diabetes mellitus.

Keywords: Diabetes mellitus, ayurveda, hypoglycemic activity

Key message: As India is moving towards becoming Diabetes capital of the world, the science of health i.e. Ayurveda is like an oasis for those afflicted by this menacing disorder. It provides a holistic, preventive and curative solution to the problem, thereby working not only on physical but also on psychological as well as sociological aspect of the disease.

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INTRODUCTION

Type 2 Diabetes mellitus has often been described as "Disease of civilization". With the rising socioeconomic standards, Diabetes mellitus is becoming country's fastest growing disease burden over 16 years to 2016. Acc. To WHO, India had 69.2 million people living with diabetes in 2015 and by 2030, nearly 98 million people in India may have type 2 diabetes[1]. At the same time, global insulin use is projected to rise markedly and will be highest in Asia alone i.e.322 million vials and lowest in Oceania i.e. 4 million in 2030. There are many hypoglycemic drugs in modern medicine which are used liberally in its management but it is the sweet irony of modern technology that the drugs are used to manage the disease but not to prevent mild metabolic derangements which is responsible for the disease progression. Secondarily, these drugs have many side effects which after prolonged use, affect kidney, liver and other organs as well. Scientists are still continuing to develop improved treatment options to give people with diabetes the best possible quality of life. Ayurveda emerges as a boon in such metabolic diseases. Ayurvedic understanding of metabolic diseases involves a multifaceted approach. Ayurveda hassystemic diagnosis, treatment principles and clinical insights for managing certain stages of diabetesmellitus which is termed as madhumeha (EF-2.4.4) in ayurveda. So the present study was done on a patient of DM to analyse the effect of ayurvedic formulations in a patient of Diabetes mellitus.

CASE HISTORY

A male patient aged 49 years from Bulandshar, U.P., presented with the complaints of increased frequency of micturition since one week, generalised weakness and burning sensation in hands and feet since 6 months at OPD no.1 (*Kayachikitsa* SAT-A.15) of VYDS ayurvedic medical College, Khurja, UP on 02/01/2019. In detailed present illness, he revealed that he was apparently asymptomatic 6 months back then he gradually started developing burning sensation in both hands and feet along with generalised weakness which remained throughout the day. One week back, he also developed increased frequency of micturition i.e.approx.12 to 15times perday. The symptom aggravated particularly at nighttime. There was no history of pain abdomen, burning micturition, hematuria, obstruction in urination or dribbling of urine.

In the history of past illness, he told that he was a known patient of DM-2 since 5 to 6 years and was taking irregular treatment for the same (drugs not known to the patient).

There was no family history of DM/HTN.

In personal history, appetite was good; thirst was increased (10 to 12 glass of water in a day); bowel habits were irregular. In micturition, frequency was increased approx. 12 to 15 ti

mes per day with no burning sensation, hematuria or urgency. Specifically nocturia was present On general examination, built was ave rage. B.P. was 130/80 mm Hg. P.R. was 82/min. wt. was 54 kg and Ht. was 5'6''. BMI was meas ured to be 19.2. No edema, pallor, cyanosis, koilonychia, clubbing, lymphadenopathy, jaundice was present. All the systemic examination revealed no abnormality.

Dashvidh Pariksha (SAT-C.155)

Prakriti (SAT-C.83) *Vatapittaja* (VA-4)

Vikriti (SAT-C.84) *Vatapittaja* (VA-4)

Sara *Madhyama*

Samhanana *Madhyama*

Satmya *Madhyama*

Satva (SAT-A.127) *Avara*

Pramana (SAT-B.513)*Madhyama*

Ahara Shakti (SAT-J.65)*Abhyavaharan shakti – madhyama,Jarana Shakti – madhyama*

Vyayama Shakti (SAT-J.23)*Avara*

Vaya (VF) *Madhyama*

Investigations done

FBS, PPBS, HbA1C, Lipid Profile, RFT, ECG, Urine for sugar and albumins

Treatment Plan of every month (for consecutive 3 months)

Table no.1 Treatment plan of one month

S.No.	Drug	Dose	*Sahapana*	Duration (in one month)
1	***Vasant kusumakar rasa***	125 mg BD after meal	*madhu* (SAT-H.99)	First 15 days of month
2.	***Gokshura*** *(Tribulus terrestris)* (SAT-F.354) ***kwatha*** (SAT-G.42)	60 ml.BD before meal	_	Last 15 days of month
3.	***Churna*** **containing**			
	Haridra (Curcuma longa) (SAT_F.558)	2gm	Total 7 gm BD, 15 min.before meal with *Phalatrikadi kwatha* (SAT-G.42) 20 ml. diluted with half glass of water	For complete month
	Karkatshringi *(Pistacia integerrima)* (SAT-F.315)	2gm		
	Methika *(Trigonella foenum gracum)* (SAT-F.479)	2gm		
	Guduchi *(Tinospora cordifolia)* (SAT-F.352) ***satva*** (SAT-G.9)			

		1gm		

Similar line of treatment was given for next 2 months i.e.total 3 months.

Pathya (SAT-H.2) ***ahara*** (SAT-H.1) ***vihara*** (SAT-J.58)

Low glycemic index fruits like Guava, sweet lime, lemon, cucumber etc.

Vegetables like bottle gourd, bitter gourd, fenugreek, beans etc.

Pulses like moong, masoor, horse gram etc.

Early morning brisk walk daily for half an hour along with Pranayama

Follow up was done after every one months and patient was observed on the basis of following - criteria.

1)Polyuria

2)Burning sensation in hands and feet

3)Generalised weakness

4)FBS

5)PPBS

6)Urine for sugar and albumin. At the end of the study, RFT was repeated to observe any changes in renal functions as the herbo-mineral drug was used for the study.

RESULT

Improvement of subjective signs and symptoms are as follows:

Table no. 2 Improvement on the basis of assessment criteria

Criteria	**Before treatment**	**After one month i.e. on 3/2/2019**	**After 2 months i.e. on 3/3/2019**	**After 3 months i.e. on 3/4/2019**
Polyuria	Present	Mild relief	Moderate relief	Absent
Burning sensation in hands and feet	Present	Mild relief	Moderate relief	Marked relief
Generalised weakness	Present	Mild relief	Mild relief	Moderate relief

Table no.3 Improvement on the basis of laboratory investigations

Lab. Criteria	**Before treatment (mg/dl)**	**After one month i.e. on 3/2/2019 (mg/dl)**	**After 2 months i.e. on 3/3/2019 (mg/dl)**	**After 3 months i.e. on 3/4/2019 (mg/dl)**
FBS	318	252	186	124

PPBS	496	401	322	219
HbA1C	10.2	-	-	-
Lipid Profile	Triglycerides 168 Cholesterol 262 LDL 143 VLDL 56 HDL 36	-	-	-
RFT	B.Urea- 28 mg/dl s. creatinine- 0.9 mg/dl S. Uric acid- 4.2 mg/dl	-	-	B.Urea- 30 mg/dl S. Creatinine- 0.8 mg/dl S. Uric acid- 4.6 mg/dl
ECG	No abn. detected	-	-	-
Urine	Sugar +++ Albumin 1+	Sugar ++ Albumin 1+	Sugar + Albumin nil	Sugar nil Albumin nil

DISCUSSION

Vasant kusumakar Rasa, an ayurvedic herbomineral preparation has been mentioned in ayurvedic text, *Bhaishajya Ratnavali* [2] in *prameha roga* (EF-2) *adhikara* and is widely used in the treatment of DM. It cures *dhatu-kshaya avastha* (SAT-D.4103) and provides *saptadhatu (SAT-B.425) and deha pushti* (SAT-D.4036) i.e. nutrition to all dhatus along with the body so helps in the management of Diabetes. It contains many *bhasma* (SAT-G.28) preparations of the metals like *abhrak* (SAT-G.144), *swarna* (SAT-G.141), *rajata (SAT-G.142), lauha* (SAT-G.144), *vanga* (SAT-G.145) along with *pravala* (SAT-F.254), *mukta* (SATG.154) *bhasma* etc. They all act on microcellular level of the body and thereby improves metabolic fire derangements i.e. *dhatvagni* (SAT-B.491) *mandyata* (SAT-D.6075). Other than this, most of the drugs have *deepana* (SAT-I.46), *pachana* (SAT-I.47) and *sroto-shodhan* (SAT-D.9120) property. They also possess *rasayana guna* (SAT-I.34) which means they have antioxidant activity which is the major cause now a days in DM like lifestyle disorders. A clinical trial has been done on diabetic rats with the same drug which showed that in the dose of 50 mg/kg/day for 8 wks, there was a significant ($p<0.01$) effect on both fasting and postprandial hyperglycemia of type 2 diabetic rats[3]. *Phalatrikadi Kwatha*, which contains six drugs, *haritaki (Terminalia chebula)*

(SAT-F.559)*, bibhitaki (Terminalia bellirica)* (SAT-F.443)*, amalaki (Phyllanthus emblica)* (SAT-F.283)*, mustaka* (*Cyperus rotundus*) (SAT-F.476), *daruharidra* (*Berberis aristata*) (SAT-F.396), *indrayana* (*Citrullus colocynthis*) (SAT-F.289) has been mentioned in *Charak samhita, chikitsa-sthana prameha roga-adhikara*[4]. Combination of haritaki, bibhitaki and amalaki, known as *triphala* possesses *rasayana* (SAT-I.34) property so reduces oxidative stress and alleviate diabetic complications. *Daruharidra* has shown a good antihyperglycemic and antioxidant action[5]. *Mustak* (SAT-F.476) and *Indrayana* have also antidiabetic effect [6], [7].

Along with the above drugs, *churna* preparation which was on trial contains *Haridra* (Curcuma longa)*, Methika* (Trigonella foenum gracum)*, Karkatshringi* (Pistacia integerrima) and *Guduchi (Tinospora cordifolia) satva.*A research study done by Arun and Nalini et al investigated the efficacy of turmeric in alloxaninduced diabetes in rats and it shows reduction in blood sugar level, HbA1C and improves lipid profile while increasing plasma insulin [8].. A research trial on Methika showed a synergistic effect along with diet control and exercise on FBS and HbA1C within 6 months of treatment [9]. *Karkatshringi* triggers insulin secretion from Endocrine pancreatic b-cells which is driven by Ca^{2+} influx in pancreatic b-cells[10], according to a research study. In the similar way, *Guduchi satva* also possess hypoglycemic as well as anti-hyperglycemic activity[11]. Along with this, it has *sheeta* (SAT-A.142) *veerya* (SAT-F.22) which improves *pittaja lakshana* (SAT-D.4943) like burning sensation in hands and feet.

CONCLUSION

It has been concluded with the study that the ayurvedic formulations selected have marked anti-hyperglycemic activity and reduces HbA1C. *Vasant Kusumakar ras*, though, is a widely known herbomineral preparation for diabetes, but should be used as per direction, *anupana* (SAT-G.3) and diet; in adequate dose to the patient. Along with it, extensive clinical trials should be required for such mineral compounds mentioned in classics to assess its proper dose according to the body weight of the patient, toxicity study, drug interaction with evaluation of their pharmacological efficacy. There is a need to create evidence base to ayurveda so that it could be accepted freely by modern medicine.

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