Chettinad Health City Medical Journal
Volume 11, Issue 4 - 2022, Pg. No. 95-99
Peer Reviewed & Open Access Journal

Case Study

Effect of *Triphaladi Kwatha* in *Madhumeha* (Diabetes Mellitus Type 2) - A Case Report

Manisha Kumari[1], Bhuwal Ram[2]

[1]PG Scholar, [2]Professor and Head, Department of Dravyaguna, IMS, BHU, Varanasi, UP, India.
DOI: https://doi.org/10.24321/2278.2044.202246

I N F O

Corresponding Author:
Manisha Kumari, Department of Dravyaguna, IMS, BHU, Varanasi, UP, India.
E-mail Id:
manisha.mandal021@gmail.com
Orcid Id:
http://orcid.org/0000-0001-7362-0997
How to cite this article:
Kumari M, Ram B. Effect of *Triphaladi Kwatha* in *Madhumeha* (Diabetes Mellitus Type 2) - A Case Report. Chettinad Health City Med J. 2022;11(4):95-99.

Date of Submission: 2022-08-16
Date of Acceptance: 2022-12-08

A B S T R A C T

Diabetes is a chronic metabolic disorder characterised by abnormally highly increased blood glucose levels. About 537 million adults (20-79 years) are living with diabetes and it is predicted to rise in number to 643 million by 2030 and 783 million by 2045. Despite many treatment options, the havoc of diabetes is increasing day by day, and along with this, it is becoming the causative factor for other diseases too. In Ayurveda, diabetes mellitus type 2 is similar to *Madhumeha*. Many herbal formulations are mentioned in the Ayurvedic literature for the treatment of *Madhumeha* in which *Triphaladi kwatha* is one of them. The present case is about a 39-year-old male patient who presented with weight loss, increase urine frequency, excessive thirst, pain in calf muscle and mild cramps in leg. The laboratory investigations showed increased fasting blood sugar level, post-prandial blood sugar level, and HbA1c. The patient was treated with *Triphaladi kwatha* (*Ghanvati*) and was advised proper diet and physical activity. After completion of therapy, a significant improvement was found in weight and other subjective symptoms. Fasting blood sugar level was reduced to 92 mg/dl from 102.9 mg/dl, Post-prandial blood sugar level decreased to 123 mg/dl from 210 mg/dl and HbA1c decreased to 5% from 5.9%. The observation indicated that Ayurvedic formulation along with proper diet and physical activity is helpful in the management of *Madhumeha* (diabetes mellitus type 2).

Keywords: Ayurveda, *Madhumeha*, Diabetes Mellitus, *Triphaladi Kwatha*, *Ghanvati*, Case Report

Introduction

Diabetes is a lifestyle disorder which is affected to a large extent by irregularities in the regular diet style. It is a non-communicable disease but becomes a means of causing other deadly diseases like a catastrophic crisis. It has spread all over the world affecting people of all ages and has become the most challenging health problem of this century. Complications from diabetes such as coronary artery disease, peripheral vascular disease, diabetic neuropathy, diabetic nephropathy etc. are resulting in increasing disability and reduced life expectancy.[1] Among them, muscle cramps, laziness, stiffness in joints and muscles, urge to drink cold liquids, obesity, dryness of the throat and palate,[2] passing large amounts of discoloured urine are the most common.[3]

In the management of diabetes, oral hypoglycaemic drugs (sulfonylureas)[4] are used as conventional medicine along with physical activity and proper diet. Similarly, in Ayurveda, various types of herbal formulations have been mentioned to treat various types of *Madhumeha* like *vataj*

madhumeha, *pittaj madhumeha*, and *kaphaj madhumeha*. It is also mentioned to exercise and abandon the reason which is the cause of *prameha.*[5]

Case Presentation

A 39-year-old male patient, Hindu by religion, married, serviceman belonging to an upper socio-economic family, visited the Ayurveda Dravyaguna OPD of Sir Sundarlal Hospital, (BHU) Varanasi, with chief complaints of weight loss in the last 1 year (previous weight-94 kg and now 81 kg), increased urine frequency (7-8 times/day and 2-4 times/night), excessive thirst (3-4 L/day) in the last 10 months, pain in the calf muscle of left leg, and mild cramps in legs on and off. The patient had a regular bowel habit and appetite was normal.

The patient was a known diabetic for 16 months with a positive family history of diabetes. He took only *Madhumeha*ri-churna (5 gm BD) with lukewarm water but did not get any proper results. He never followed any regimen towards diet and physical activity.

Clinical Findings

The pulse rate was 82/min and regular with a blood pressure of 130/90 mmHg and respiratory rate of 16/min. The respiratory, cardiovascular, and central nervous systems did not show any specific abnormality. Per abdomen examination was normal.

Investigation

Routine haematological lipid profile, HbA1c, fasting blood sugar, postprandial blood sugar, renal function test, liver function test, and urine test were carried out to rule out other pathology and to access the cause of the underlying problem in which HbA1c was found to be 5.9%, fasting blood sugar level was 102.9 mg/dl, postprandial blood sugar level was 210 mg/dl, and the rest were within normal limits.

Treatment Protocol

Considering all the investigation and condition of the patient, treatment was started according to the Ayurvedic perspective. *Triphaladi kwatha* in the form of *Ghanvati* was prescribed. Brief details of the ingredients of drugs have been given in Table1. The dose of *kwatha* 2 pala is about 96 ml.[6] Coarse powder of the drug (approx. 20 gm) was taken and mixed with eight times water. It was then boiled till the water remain one-fourth of the initial quantity. The remaining liquid decoction was separated with a cotton cloth. Again, heat was given to the *kwatha* to change into Ghana form and finally, *Ghanvati* was prepared. The general dose given was 3 gm (1000 mg thrice a day) in the form of *Ghanvati* and was recommended for a duration of three months. During this process, the patient was advised to follow a regular diet, physical activity, not to consume sweet things, and not to remain hungry for long.

Table 1.Ingredients of *Triphaladi Kwatha*

Drugs	Ingredients	Botanical Name	Part Used	Ratio	Duration
Triphaladi kwatha (Ghanvati)	*Haritaki*	*Terminalia chebula* Retz.	Fruit	1 part	3 months
	Bibhitaki	*Terminalia bellirica* Roxb.	Fruit	1 part	
	Amalki	*Emblica officinalis* Gaertn.	Fruit	1 part	
	Devdaru	*Cyderus deodara (Roxb.)* Loud	Stem	1 part	
	Daruharidra	*Berberis aristata* D.C.	Stem	1 part	
	Musta	*Cyperus rotundus* Linn.	Rhizome	1 part	

Assessment Criteria

Improvement was assessed on the basis of the percentage relief observed in the presenting complaints. The scale of symptoms of cases has been shown in Table 2.

Table 2.Scale of Symptoms of Cases

Symptoms	Score	Grade	Grading Criteria of Symptoms
Polyurea	0	Absent	Normal frequency 1-4 times/day, 0-2 times/night with normal volume
	1	Mild	5-7 times/day, 3-5 times/night with normal volume
	2	Moderate	8-10 times/day, 3-5 times/night with excessive volume
	3	Severe	> 10 times/day, > 8 times/night and with excessive volume

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202246

Polydipsia	0	Absent	Normal 1.5-3 L/day
	1	Mild	Increased but controlled; 3-4 L/day
	2	Moderate	Increased but uncontrolled; 4.5 L/day
	3	Severe	Very much increased; > 5 L/day
Polyphagia	0	Normal	Main meal 2, light breakfast 1/day
	1	Mild	Main meal 2, light breakfast 2-3/day
	2	Moderate	Main meal 2, light breakfast 3-5/day
	3	Severe	Main meal 2 or 3, light breakfast > 5/day
Weakness	0	Absent	No feeling of weakness
	1	Mild	Mild feeling of weakness
	2	Moderate	Routine activities disturbed
	3	Severe	Severe weakness leading to being bedridden
Loss of weight	0	Absent	0-2kg/year
	1	Mild	2-4 kg/year
	2	Moderate	4-6 kg/year
	3	Severe	> 6 kg/year
Other Complications			
Cramps in legs	0	Absent	No cramps
	1	Mild	Cramps after walking 1 km
	2	Moderate	Cramps after walking some distance
	3	Severe	Inability to walk even up to 0.5 km
Tingling and buring sensation	0	Absent	No tingling and burning sensation
	1	Mild	Sense of burning and tingling in palm and soles of a mild degree
	2	Moderate	Sensation like the crawling of ants all over the body and burning that hamper a patient's routine work
	3	Severe	Loss of sensation

Observation and Results

Considerable improvement was observed in the first follow-up. Following regular diets and physical activity, the patient got improvement in weight loss and relief from polyuria and polydipsia problems (Table 3). HbA1c, FBS, and PPBS came down as shown in Table 4. Overall, the patient had a satisfactory response and no complaint of associated symptoms. Also, no side effects were noticed during the whole period of the treatment.

Table 3.Effect of Treatment on Polyuria, Polydipsia, and Weight Loss

	Before Treatment	F1	F2	F3
Polyuria	2	1	0	0
Polydipsia	1	1	0	0
Weight (kg)	81	84	84.5	84.5

(F1: First follow-up, F2: Second follow-up, F3: Third follow-up)

Table 4.Assessment of HbA1c, FBS, and PPBS

Date	HbA1c (%)	FBS (mg/dl)	PPBS (mg/dl)
Before treatment			
14/8/2021	5.9	102.9	210
Follow-up			

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202246

17/9/2021		98	170
31/10/2021		100	135
8/12/2021	5	92	123

Discussion

The present case of diabetes mellitus was due to hereditary reasons and weight loss may be due to *medakshay* as has been described in *Astangahridaya* that fat losses are the cause of decreased body muscle,[7] and pain and cramps in muscle may be due to *kaphakshaya*.[8]

The treatment was started with the classical formulation of *Triphaladi kwatha*, as indicated in *Madhumeha* by *Acharya Yogaratnakara*. Along with the medicine, the patient was advised to follow regular diets and physical exercise. As we know, *kaphavāta doṣa* and *abadhha meda* are the main factors in the pathogenesis of *Madhumeha*, therefore the treatment requires to combat the *kaphavāta doṣa* and *meda duṣya*. As already mentioned, *Triphala* (*Haritaki, Bibhitaki* and *Amalki*) is useful in diabetes.[9] *Rasa panchaka* of the ingredients of *Triphaladi kwatha*, as mentioned in Table 5 mainly has *Tikta, Kashaya rasa*, *Laghu Ruksha guna*, and *Usna virya*.[10] *Kaṣhaya* rasa of *Bihitaki, Daruharidra*, and *Musta* as being stambhana decreases *Śārīragatakleda* and is useful in *Bahumūtratā* and *pippasa*. Being *rasayan*, *Amalki* decreases o*jakshay* and gives strength to the body. This may be due to *dravya prabhav*. *Usna virya* of *Devdaru* and *Daruharidra* pacify vata and reduce pain, which may be due to *guna prabhav*. Appetising along with the purgative action of *Haritaki*[11] and improvement in physical strength by madhura property of *Amalki* and *katu tikta* property of *Devdaru* and *Musta may* be due to *dravyaguna prabhav.* Laghu guna brings excitement and energy to the body.[12]

Pharmacological properties of the ingredients of *Triphaladi kwatha* include anti-diabetic, anti-hypertensive, laxative, anti-inflammatory, anti-oxidant, immuno-stimulant, bronchodialatory, hepatoprotective, nephroprotective, and cardioprotective effects (Table 6).

Hence, the medicine helps to bring down the blood sugar level as well as pacify the pain and give strength to the body.

Table 5.*Rasa Panchaka* of the Ingredients of *Triphaladi Ghanvati*

Drug	Rasa	Guna	Vipaka	Vīrya
Harītakī	*Kaṣhaya*	*Laghu, Ruksha*	*Madhura*	*Usna*
Bībhītakī	*Kaṣhaya*	*Laghu, Ruksha*	*Madhura*	*Usna*
Āmalkī	*Amla*	*Guru, Ruksha, Sīta*	*Madhura*	*Sīta*
Devdārū	*Tikta*	*Laghu, Snigdha*	*Katu*	*Usna*
Dāruharīdrā	*Tikta, Kaṣhaya*	*Laghu, Ruksha*	*Katu*	*Usna*
Mustā	*Tikta, Katu, Kaṣhaya*	*Laghu, Ruksha*	*Katu*	*Sīta*

Table 6.Pharmacological Properties of Ingredients of *Triphaladi Ghanvati*

Ingredients	Properties
Haritaki	Anti-diabetic, anti-arthritic, anti-anaphylactic, anti-oxidant[13]
Bibhitaki	Anti-diabetic, anti-hypertensive, anti-pyretic, anti-spasmodic, anti-thrombotic, laxative, bronchodialatory[14]
Amalki	Hypolipidemic, antioxidant, hepatoprotective, nephroprotective, cardioprotective, anti-inflammatory[15]
Devdaru	Anti-hyperglycaemic, anti-oxidant[16]
Daruharidra	Anti-inflammatory, laxative, anti-microbial, anti-diabetic, anti-oxidant[17]
Musta	Anti-diabetic, anti-inflammatory[18]

Conclusion

Diabetes is a lifestyle disorder. In the early stages, the symptoms of diabetes can be cured by regular diet and physical exercise, but when the stage of the disease progresses, along with all these rules, the use of medicine is beneficial. *Triphaladi ghanvati* is effective in reducing blood sugar levels and improving the quality of life of diabetics. This review clarifies the fact that how the *panchabhautik* properties and other pharmacological properties present

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202246

in the ingredients of *Triphaladi ghanvati* are effective in *Madhumeha*. This work is helpful for new researchers to collect information and do further research in this field.

Source of Funding: None

Conflict of Interest: None

References

1. Wilkinson I, Wilkinson IB, Raine T, Wiles K, Goodhart A, Hall C, O'Neill H. Oxford handbook of clinical medicine. 10th ed. Oxford University Press. 2017. p. 206-8. [Google Scholar]
2. Shri Agnivesha. Charaka Samhita. Revised by Charaka, Dridhbala. Introduced by Sastri SN. Elaborated Vidyotini Hindi Commentary by SastriK, Chaturvedi GN. Part-II. Varanasi Chawkhambha Bharti Academy; 2015. 234 p.
3. Vagabhata, Gupta K, commentary. Upadhyaya Y, editor. Astang hridayam, prameha nidan.Varanasi Chawkhambha Sanskrit Sansthana; 2005. 253 p.
4. Udaykumar P.Medical pharmacology. 5th ed. CBS Publishers & Distributors Pvt Ltd; 2019. 648 p.
5. Shri Agnivesha. Charaka Samhita. Revised by Charaka, Dridhbala. Introduced by Sastri SN. Elaborated Vidyotini Hindi Commentary by Sastri K, Chaturvedi GN. Varanasi Chawkhambha Bharti Academy; 2015. p. 242-3.
6. Sharanghacharya, Tripathi B, commentary. Sharangdhar Samhita. Varanasi Chaukhambha Sur Bharati Prakashan; 2018. 100 p.
7. Vagbhatta, Gaur BL, commentary. Astang hridayam. Varanasi Chaukhambha Orientalia; 2013;195.
8. Vaga B, Gupta KA, commentary. Astang sangrah. Varanasi Chaukhambha Orientalia; 2013.
9. Sri Bhavmishra, Chunekar KC, commentary. Bhavprakash Nighantu. Varanasi Chaukhambha Bharti Academy; 2013. 12 p.
10. Sri Bhavmishra, Chunekar KC, commentary. Bhavprakash Nighantu. Varanasi Chaukhambha Bharti Academy; 2013. p. 5, 9, 10, 187, 111, 115, 232.
11. Sharma PV, Dubey S. Dravyaguna sutram. Varanasi Chaukhambha Sanskrit Sansthan; 2013. 92 p.
12. Sharma PV. Dravyaguna vigyan. VolI. Varanasi Chaukhambha Bharti Academy; 2013. 163 p.
13. Gupta PC. Biological and pharmacological properties of Terminalia chebula Retz. (Haritaki) - an overview. Int J Pharmac Pharma Sci. 2012;4(3). [Google Scholar]
14. Kumari S, Krishna M, Joshi AB, Gaurav S, Bhandarkar AV, Agarwal A, Deepak M, Gururaj GM. A pharmacognostic, phytochemical and pharmacological review of Terminalia bellerica Roxb. J Pharmacog Phytochem. 2017;6(5). [Google Scholar]
15. Hasan MR, Islam MN, Islam MR. Phytochemistry, pharmacological activities and traditional uses of Emblica officinalis: a review. Int Curr Pharma J. 2016;5(2). [Google Scholar]
16. Gupta S, Walia A,Malan R. Phytochemistry and pharmacology of Cedrus deodara: an overview. Int J Pharm Sci Res. 2011;2(8). [Google Scholar]
17. Chaudhary S, Kaurav H, Madhusudan S, Chaudhary G, Daruharidra (Berberisaristate DC.): review based upon its Ayurvedic properties. Int J Res Appl Sci Biotech. 2021;8(2):98-106.
18. Satyanarayan P, Subash S, Madan SA. A review of medicinal properties on Musta (Cyperus rotundus Linn.). Ayushdhara. 2019;6(3).