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Case Study

A CASE STUDY TO EVALUATE THE ROLE OF *TRAYAUSHNADI VATI* IN THE MANAGEMENT OF *MADHUMEHA* (TYPE 2 DIABETES MELLITUS)

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ABSTRACT

India is known as the diabetes capital of the world. By 2025, the country's diabetes population will have risen to 69.9 million, and by 2030, it will have risen to 80 million. This means that the developing country is anticipated to have a 266% gain. In the present study, a 35-years-old obese male patient came to the OPD with complaints of *Daurbalyata* (weakness), *Atimutrata* (increased frequency of micturition) and *Atitrishna* (excessive thirst) since seven days. The diagnosis leads to *Madhumeha* (Type 2 Diabetes mellitus) through physical findings and biochemical investigations. The treatment plan opted for was *Trayaushnadi Vati* with a change in diet and lifestyle. This case study emphasizes the usefulness of Ayurveda and it aims to detoxify, purify, strengthen and balance the body *Dosha* (regulatory functional factors of the body) of the body *Dhatus* (major structural components of the body) to attack the root cause and ensure complete healing. Several medicinal herbs appear to be as beneficial as traditional anti-diabetic medications in lowering HbA1c levels. To determine the benefits of prospective plant-based medicines on diabetes, rigorous trials with at least 3 months of follow-up are required.

INTRODUCTION

Modern Science said that diabetes is due to a shift in people's lifestyles around the world. People nowadays are living a sedentary lifestyle, eating a lot of fast food, and gaining weight. These are the key factors that cause diabetes. Diabetes is a group of metabolic diseases characterised by hyperglycemia resulting from defects in insulin secretion, insulin action, or both.[1] The prevalence of Diabetes in 15 Indian states in an Indian Council of Medical Research study was found to be 7.3%.[2] Symptoms of marked hyperglycemia include polyuria, polydipsia, weight loss or gain, polyphagia. Impairment of growth and susceptibility to certain infections may also result from chronic hyperglycemia.[3] Acute and life-threatening consequences of uncontrolled diabetes include hyperglycemia with ketoacidosis or the nonketotic hyperosmolar syndrome. Long-term complications of diabetes include retinopathy, nephropathy, peripheral neuropathy and autonomic neuropathy causing gastrointestinal, genitourinary, and cardiovascular symptoms and sexual dysfunction.

According to *Charaka*, Ayurveda said that diabetes is mainly of two types hereditary and that caused by unwholesome food and life style, and all twenty types of *Prameha* due to *Asya-sukham* (always consume such things which are pleasing to the mind and mouth.) *Swapna-sukham* (sleeping with pleasure), and continuous eating habit of *Dadhi* (curd), *Gramya-Audak-Anoop-Rasa* (all types of meat), *Payansi* (milk products), *Nava-anna-pana* (new crops), *Guda-vaikratam* (sugar products), and *Kapha-hetu-sarvam* (all those substances which increases sugar in the body).[4]

Ayurveda through its armamentarium can prove vital in the management of diabetes mellitus.

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Based on similarities in signs and symptoms, type 2 diabetes mellitus can be compared its *Madhumeha* in Ayurveda. All the type of *Prameha*, if not treated in time develop into *Madhumeha.*[5] The person indulging in day sleeping, abstains from physical exercise, is lazy and takes cold, unctuous, sweet and fatty foods or drinks is causative for the development of *Prameha.*[6] *Meda* (fatty tissue of the body), *Mamsa* (muscle), *Kleda* (moistened) along with predominant *Kapha* associated with vitiated *Pitta* and *Vata* get accumulated in *Basti* and this leads to *Prameha.*[7] The *Samanya Lakshana* of it is *Avilamutrata* along with associated symptoms according to the predominant *Dosha*.

Patient Information

A 35 years old obese (104kg weigh, 150cm height) office going patient, the blood pressure was 140/86mmHg, pulse rate was 78/min, having complaints of *Daurbalyata* (weakness), *Atimutrata* (increased frequency of micturition) and *Atitrishna* (increased thirst) since 2 months, approached the OPD.

Clinical Findings

The appetite and bowel habits of the patient were normal. Sleep was disturbed and he presented with *Atimutrata* (increased frequency of micturition /5-6 times/night) He presented no family history of type 2 diabetes and was taking a mixed diet. He presented a history of alcohol intake of 60-80ml/drink (3-4 times/week). His weight was 104kg. He was not suffering from any other chronic illness. The patient was not taking any prior medications for this. Vitals were normal, and examinations of the nervous system, cardiovascular system, and gastrointestinal systems had shown no abnormality.

Timeline

Detail of timeline is mentioned in Table 1.

Table 1: Timeline

Date	Clinical findings	Therapeutic intervention
31/07/2021	Visited hospital with complaints of repeated episodes of *Daurbalyata* (weakness), *Atimutrata* (increased frequency of micturation) 7-8 times/day and 5-6 times at night and *Atitrishna* (increased thirst) since 2 months	Patient advice to take *Trayushnadi Vati*, 500mg, three times a day before a meal Chapati- 80% barley flour + 20% wheat flour 2 chapati at a time in 3 three times/day. Vegetables- *Bathua* (*Chenopodium album* Linn.), *mulipatra* (Raphanus *sativus* Linn.), *Lauki*/White gaurd (*Laegenaria vulgaris* Ser.), *Katutumbi*/Bitter guard (*Laagenaria vulgaris* Ser.), *Karela* (*Momordica charantia* Linn.), *Nenua* (*Luffa aegyptiaca* Mill), *Torai*(*Luffa acutangula* Roxb.), *Patol* (*Tricosanthes dioca* Roxb.) *Kundru* (*Coccinia indica* W. & A.) *Sahijana* (*Moringa oliefera* Lam.). Pulses- *Mudga* (*Phaseolus radiates* Linn.), *Masoor* (*Lens culinaris* Medic.), *Adhaki* (*Cajanus indicus* Spreng.) alternatively Oil- Mustard oil and desi ghee was advised within limits Do physical exercise daily (45 minutes brisk walk at early morning). All the milk, sugar and meat products strictly restricted.
14/08/2021	*Dauryabalata* (weakness) is present, frequency of micturation was reduced 3-4 times/day and 2-3 times at night, and *Trishna* (thirst) is reduced	Continue the same interventions
28/08/2021	*Dauryabalata* (weakness) is absent, frequency of micturation was reduced 2-3times/day and 1-2 times at night, and *Trishna* (thirst) is also absent	Continue the same interventions
13/09/2021	*Dauryabalata* (weakness) is absent, frequency of micturation was reduced 1-2 times /day nil at night, and *Trishna* (thirst) is also absent	Continue the same interventions

Diagnostic Assessment

Nadi-pariksha and *Dashvidha-pariksha* was done. *Nadi* (pulse)-*Vata- Kaphaja, Jihwa* (tongue)- *Malavrit* (coated), *Mala* (excretory product of body)- twice/day, *Mutra* (urine)-7-8 times/day and 5-6 times at night, *Shabdha* (voice)- *Gambhira, Sparsha* (touch)- *Anushana-shita, Drika* (vision)- *Prakrit* (normal), *Akriti* (shape)- *Madhayama, Prakriti* (body constitution)- *Vata- Kaphaj, Vikriti* (pathology)-*Doshadushyanimitta* (mainly *Vatadosha* and *Meda dhatu), Saara* (strength of body)- *Madhyama, Samhanana* (compactness of body)- *Madhyama, Satmaya* (homologation)- *Madhyama, Satva* (mental State), *Madhyama, Pramana* (proportionate relation of the different organ)- *Madhyama, Ahara shakti* (digestive power)- *Abhyaharana Shakti: Pravar; Jarana Shakti: Madhyama, Vyayamashakti* (age strength in relation to life span)- *Madhyama, Vaya* (age)- *Madhyamavastha.* His renal function test, liver function test, lipid profile and estimated glomerular filtration rate were within normal limits. His glycated haemoglobin was 9.1%, his Fasting blood sugar was 170mg/dl, and his postprandial blood sugar was 253mg/dl on 31/7/2021.

Therapeutic Intervention

The patient was given *Trayushnadi Vati,* 500mg, three times a day before a meal [Figure 1]. *Trayushnadi Vati* contains *Triphala:Trikatu:Gokshura*:*Guggulu*= 1:1:1:3.[8] Along with this drug the patient was asked to modify his diet with the one containing.

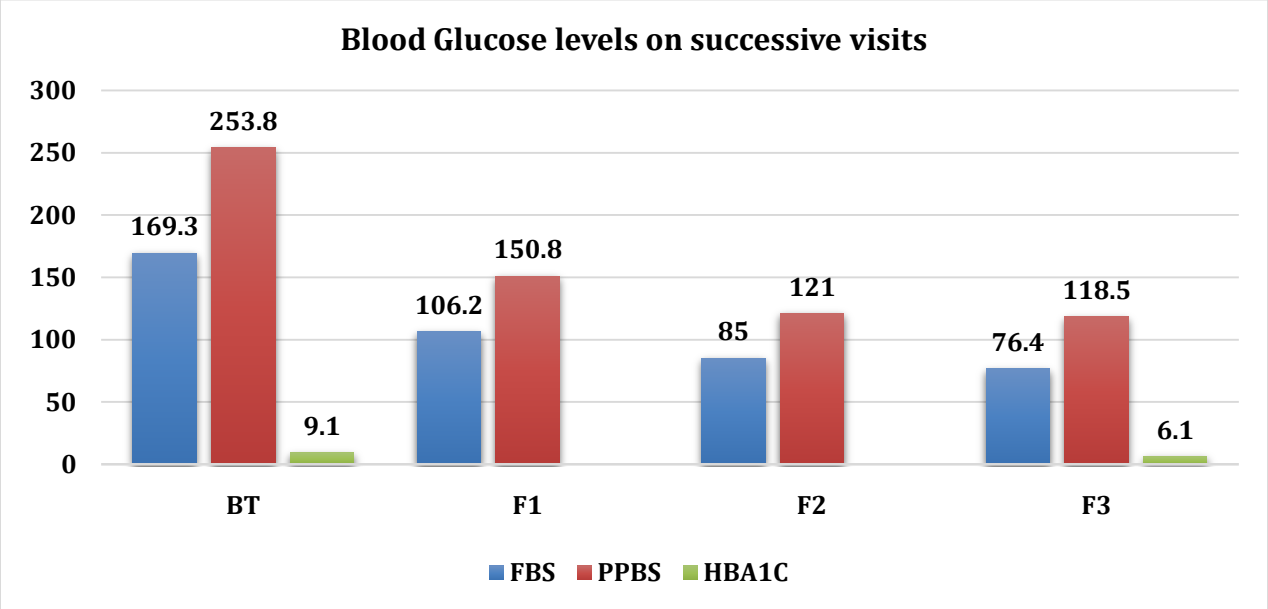
Chapati- 80% barley flour + 20% wheat flour 2 chapati at a time in 3 three times/day. Vegetables *Bathua* (*Chenopodium album* Linn.), *Mulipatra* (Raphanus *sativus* Linn.), *Lauki*/White gourd (*Lagenaria vulgaris* Ser.), *Katutumbi*/Bitter gourd (*Laagenaria vulgaris* Ser.), *Karela* (*Momordica charantia* Linn.), *Nenua* (*Luffa aegyptiaca* Mill.), *Torai* (*Luffa acutangula* Roxb.), *Patol* (*Trichosanthes dioca* Roxb.) *Kundru* (*Coccinia indica* W. & A.), *Shigru* (*Moringa oleifera* Lam.), Pulses- *Mudga* (*Phaseolus radiates* Linn.), *Masoor* (*Lens culinaris* Medic), *Adhaki* (*Cajanus indicus* Spreng.) alternatively, at lunchtime with chapati. Fruits- According to season i.e., apple, grape, pear, orange, strawberry. Oil- Consume only mustard oil and desi ghee. Physical exercise daily (45 minutes brisk walk in the early morning). All the milk, sugar, and meat products are strictly restricted. The patient was reviewed every 2 weeks.

Follow-Up and Outcome

In the 45 days, since his presentation, his glycated hemoglobin (HbA1c) has improved from 9.1% to 6.1%, fasting blood glucose level from 169.2mg/dl to 76.4mg/dl, and post prandial glucose level 253.8mg/dl to 118.5mg/dl. *Trayushnadi Vati*, 500mg, three times a day before a meal, with prescribed do and don'ts, provided subjective relief from his symptoms as well as a reduction in his fasting blood glucose level, postprandial blood glucose level, and glycated haemoglobin (Table 2, 3).

Criteria	BT (Before Treatment) 31/7/2021	AT (After Treatment)		
		F1 (First follow up) 14/8/2021	F2 (Second follow up) 28/8/2021	F3 (Third follow up) 13/9/2021
Daurbalyata (weakness)	Present	Present	Absent	Absent
Atimutrata (increased frequency of micturition)	7-8 times/day and 5-6 times at night	3-4 times/day and 2-3 times at night	2-3times/day and 1-2 times at night	1-2 times /day nil at night
Atitrishna (increased thirst)	Present	Absent	Absent	Absent

Date	BT (Before Treatment) 31/7/2021	AT (After treatment)		
		F1 (First follow up) 14/8/2021	F2 (Second follow up) 28/8/2021	F3 (Third follow up) 13/9/2021
FBS	169.3 mg/dl	106.2 mg/dl	85 mg/dl	76.4 mg/dl
PPBS	253.8 mg/dl	150.8 mg/dl	121 mg/dl	118.5 mg/dl
HbA1c	9.10%	NA	NA	6.10%



DISCUSSION

Diabetes Mellitus is definitely a by-product of urbanization, proclaimed thousand years back by Charaka. In the new millennium, with the advancement of modern technology humans have shifted their eyes towards sedentary lifestyle being the sacking cause of diabetes today. *Madhumeha* is a *Tridoshaja vyadhi* with *Abadhhashlesma* considered to be particular *Dosha* in all types of *Prameha*. Treatment of *Madhumeha* is difficult due to contradictory treatment of *Vata* (predominant *Dosha*) and *Meda* (predominant *Dushya*). The drugs which combat *Vata* will increase *Meda-Kapha* and vice-versa. In *Avaranajanya Madhumeha* the treatment must be like that should not vitiate *Vata* and also clear the *Avarana*. Polyherbalism, a natural-based alternative therapy for a variety of ailments, has been mentioned since the period of Charaka, for the treatment of type 2 diabetes mellitus (T2DM) and its consequences, herbal-based combination therapy plays a critical role. *Trayushnadi Vati* containing the ingredients *Pippali (Piper longum* L.*), Maricha (Piper nigrum* L.*), Shunthi (Zingiber officinale* Roscoe*), Haritaki (Terminalia chebula* Retz.*),*

Bibhitaka (Terminalia bellirica (Gaertn.) Roxb.*), Amalaki (Emblica officinalis* Gaertn.), *Gokshura (Tribulus terrestris* L.*)* and *Guggulu (Commiphora mukul* (Hook. Ex Stocks)) is mentioned by *Acharya* Chakradatta for the management of *Prameha, Mutraghata, Vataroga* and *Udararoga*.[8] As we know *Kapha-vatadosha* and *Abadhhameda* are the key factors in pathogenesis of *Madhumeha* therefore the treatment requires combating the *Kaphavata dosha* and *Meda*. *Katu rasa* and *Ushna Virya* of *Pippali, Maricha* and *Shunthi* alleviates *Kapha-vatadosha* and *meda.*[9] *Kashaya rasa* of *Haritaki, Bibhitaki* and *Amalaki* also alleviate *Kapha* and being *Stambhana* it also decreases *Shariragata-kleda* and is beneficial in *Bahumutrata*.[10] Because of its *Laghuguna* and *Bhedana* action it is *Srotoshodhaka*. The *Laghu, Ruksha, Tikshna Vishada, Sukshma* and *Saraguna* of *Guggulu* alleviate *Kapha-vata dosha, Kleda* and *Meda* from the body. This formulation is also beneficial in the treatment of *Madhumeha* due to the *Bast-shodhana* (intestinal cleaning) function of *Gokshura* and *Tridoshamaka*, as well as the *Rasayana* impact of *Triphala* and *Guggulu*.[11,12] Moreover, the constitutents in *Triphala*, including ellagitannins and gallotannins, also enhance both PPAR- alpha and –gamma signalling, which increase insulin responsiveness and glucose uptake without inducing adipogenesis.[13] Piperine present in *P. Longum* and *P. nigrum* has been shown to enhance the bio- availability of structurally and therapeutically diverse drugs, possibly by modulating membrane dynamics, due to its easy portioning and increasing permeability.[14] Guggulsterone has hypoglycemic and hypolipidemic effects.[15] In vitro studies conducted with extracts from *Tribulus terrestris* have shown to inhibit the activity of alpha-glucosidase and alpha-amylase. Inhibition of these enzymes has been proven to reduce postprandial hyperglycemia in diabetic patients.[16]

So, on the basis of these studies conducted by modern researchers related to the contents of the *Trayushnadi Vati* it can be assumed that the drug may have acted through any of these pathways.

CONCLUSION

From the present study, it can be concluded that the Ayurvedic management of *Madhumeha* is better achieved by following the proper dietary habits, lifestyle, and oral medication. The comprehensive approach of Ayurveda can surely lead the path not only to better glycemic control, but also to improving the quality of life of diabetics and lowering the economic, national, and global burden of diabetes, and at the same time this treatment will be very cheap for the patient. However, because this is a single case report, more evidence of the results of the treatment in patients with similar symptoms will undoubtedly help the diabetic population.

REFERENCES

1. Harrison's Principles of Internal Medicine 19th edition, Volume 2, Mc Graw Hill Education. pg. 2400.
2. Anjana RM, Deepa M, Pradeepa R, Mahanta J, Narain K, Das HK, Adhikari P, Rao PV, et al; ICMR–INDIAB Collaborative Study Group. Prevalence of diabetes and prediabetes in 15 states of India: results from the ICMR-INDIAB population-based cross-sectional study. Lancet Diabetes Endocrinol. 2017 Aug; 5(8): 585-596. doi: 10.1016/S2213-8587(17)30174-2. Epub 2017 Jun 7. Erratum in: Lancet Diabetes Endocrinol. 2017 Aug; 5(8): e5. PMID: 28601585.
3. American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care. 2009 Jan; 32 Suppl 1 (Suppl 1): S62-7. doi: 10.2337/dc09-S062. PMID: 19118289; PMCID: PMC2613584.
4. Shastri S.N, editor. Charaka Samhita of Agnivesha, Chikitsa Sthana. Reprint ed., Ch. 6., Ver. 5. Varanasi: Chowkhamba Bharti Academy; 2013. p. 227.
5. Shastri A, editor. Sushruta Samhita of Sushruta, Nidana Sthana. Reprint ed., Ch. 6., Ver. 30. Varanasi: Chaukhamba Sanskrit Sansthan; 2017. p. 255.
6. Shastri S.N, editor. Charaka Samhita of Agnivesha, Chikitsa Sthana. Reprint ed., Ch. 6., Ver. 5. Varanasi: Chowkhamba Bharti Academy; 2013. p. 227.
7. Shastri S.N, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Reprint ed., Ch. 17., Ver. 78-81. Varanasi: Chowkhamba Bharti Academy; 2005. p. 352-53.
8. Tripathi I, editor. Chakrapanidatta of Chakradatta, Prameha Chikitsa. Reprint ed., Ch. 35., Ver. 52-53. Chaukhamba Sanskrit Bhawan; 2012. P.219-20
9. Chunekar K.C, editor. Bhavaprakash Nighantu, Haritakyadi Varga. Revised & Enlarged ed., Ver. 44-61. Chowkhamba Bharti Academy; 2010. P.12-17
10. Chunekar K.C, editor. Bhavaprakash Nighantu, Haritakyadi Varga. Revised & Enlarged ed., Ver. 19-41. Chowkhamba Bharti Academy; 2010. P.5-11
11. Peterson CT, Denniston K, Chopra D. Therapeutic Uses of Triphala in Ayurvedic Medicine. J Altern Complement Med. 2017 Aug; 23(8): 607-614. doi: 10.1089/acm.2017.0083. Epub 2017 Jul 11. PMID: 28696777; PMCID: PMC5567597.
12. Chunekar K.C, editor. Bhavaprakash Nighantu, Guduchyadi Varga. Revised & Enlarged ed., Ver. 44-45. Chowkhamba Bharti Academy; 2010. P. 279-80
13. Yang MH, Vasquez Y, Ali Z, Khan IA, Khan SI. Constituents from Terminalia species increase PPARα and PPARγ levels and stimulate glucose

uptake without enhancing adipocyte differentiation. J Ethnopharmacol. 2013 Sep 16; 149(2): 490-8. doi: 10.1016/j.jep.2013.07.003. Epub 2013 Jul 10. PMID: 23850833.

14. Pharmacy. 12. S437-S441. Kaushik, Rahul & Jain, Jainendra & Danish Khan, Azhar & Rai, Pallavi. (2018). Trikatu - A combination of three bioavailability enhancers. International Journal of Green
15. Sharma B, Salunke R, Srivastava S, Majumder C, Roy P. Effects of guggulsterone isolated from Commiphoramukul in high fat diet induced diabetic rats. Food Chem Toxicol. 2009 Oct; 47(10): 2631-9. doi: 10.1016/j.fct.2009.07.021. Epub 2009 Jul 25. PMID: 19635521.
16. Inhibitory effects of chickpea and Tribulus terrestris on lipase, α-amylase and α-glucosidase. Food Chem. 2016 Aug 15; 205: 163-9. doi: 10.1016/j.foodchem.2016.03.012. Epub 2016 Mar 4. PMID: 27006227.

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