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Efficacious standalone Ayurveda treatment in management of Diabetes Mellitus - II : A Case Report

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ABSTRACT

Background: Diabetes is becoming one among the widely spread non-communicable disease across world and especially in India. *Ayurveda* treatment approach needs to be validated and documented so as to utilize its knowledge storehouse in managing this disease well. **Aim:** Standalone *Ayurveda* intervention was given to a *Prameha* (diabetic) patient and observations were recorded. **Methodology:** Medications prescribed were *Nisha-Amalaki* tablet, *Maha Vangeshvara Rasa* and *Amrutottara Kvatha*. *Amalaki Svarasa* was also included in her prescription owing to her high glucose values in blood and urine. Diet and lifestyle modifications were also advised. **Results:** The holistic *Ayurveda* treatment plan worked well to control *Prameha Samprapti* (Diabetes mellitus). Both the subjective and objective metrics improved significantly. Hunger and sleep improved. Reduced polyuria, polydipsia, and fatigue were observed. HbA1C decreased from 11.5% to 8.08%, Fasting Blood Sugar decreased from 240 mg/dl to 170 mg/dl, Post Prandial Blood Sugar decreased from 356 mg/dl to 306 mg/dl, Fasting Urine Sugar decreased from 1% to zero, and Post Prandial Urine Sugar decreased from 1.5% to 1%.

Key words: *Ayurveda*, *Prameha*, *Diabetes*

INTRODUCTION

Across the world, 537 million adults between the ages of 20 and 79 are thought to have diabetes, according to the 10th edition of the Diabetes Atlas released by the International Diabetic Federation in 2021. India has the second-highest percentage of diabetes patients between 20 to 79 years old (74.2 million).^[1]

According to study collaborators for the India State-Level Disease Burden Initiative Diabetes, the prevalence and number of diabetic persons in India increased from 5.5% and 26.0 million in 1990 to 7.7%

and 65.0 million in 2016. The highest frequency was recorded in Tamil Nadu in 2016, followed by Kerala, Delhi, Punjab, Goa, and Karnataka.^[2]

In spite of many researches to manage diabetes better, no hard and fool proof solution is found yet. Hence a need to explore indigenous medical science's knowledge database in managing disease similar to diabetes in their respective texts is the need of this era. *Ayurveda* is based upon principle of patient targeted treatment rather than disease specific. Thus, the intent of presenting of this case report. Standalone *Ayurveda* treatment was given to a high-risk Diabetes mellitus-II showing *Prameha* symptoms too.

CASE REPORT

Timeline

- Female, 48 years old, homemaker, hailing from rural Bengaluru, Karnataka.
- Diagnosed with high glucose values on a doctor's visit for her severe fatigue complaints. For two years the patient had not taken any medicines, assuming it can be controlled with diet.

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- During July 2022, she approached our hospital seeking Ayurveda medications.
- Patient was drug naive and wished for stand-alone Ayurveda treatment.
- Amalaki Svarasa* was included in her prescription owing to her high glucose values in blood and urine. Other medicines prescribed were *Nisha-Amalaki* tablet, *Maha Vangeshvara Rasa* and *Amrutottara Kvatha*. Observation from 25/07/2022 to 05/12/2022 have been presented in this case-report.
- Dietary modifications like including ragi balls, jowar roti and adding barley powder to wheat flour while preparing chapattis were advised.
- Lifestyle modification like daily walking until sweat starts and oil massage with *Balaguloochyadi Taila* were advised.

Intervention advised

Drug and Dosage form

- Svarasa* (juice) of *Amalaki Phala* (*Phyllanthus emblica* fruits)
 - Two fruits of fresh de-seeded *Amalaki* fruits, 50 ml water to grind it
 - Time of intake: *Ananna Kala*^[12] (empty stomach)
 - This particular time was suggested because it has been noted that a medication has its strongest effects when taken on an empty stomach and without meals.^[13]
- Nisha Amalaki* - 2 tablets before food TID
- Maha Vangeshvara Rasa* - 1 tablet after food TID
- Amrutottara Kashaya* - 2 teaspoon in warm water after food TID

Clinical findings and outcome

A. Diagnosis

Patient exhibited *Bahumutrata* symptom (polyuria, which includes both or either increased quantity of urine and increased frequency of micturition), whereas

Avilatva in *Mutra* (turbidity in urine) was not evidently notice. *Atitrishna* (excessive thirst) and *Glani* (fatigue even without physical strain). Hence diagnosed as *Prameha*.

B. Investigations (before and after treatment)

Objective grading

Table 1: Objective grading of observations before and after intervention

SN	Observations	Before intervention grading	After intervention grading
1.	Polyuria	<ul style="list-style-type: none"> 3-4 times in night after sleep Once in 2 hours during day time 	<ul style="list-style-type: none"> 1 time in night after sleep Once in 3-4 hours
2.	BMI	33.5	32.8

Visual Analogue Scale [iii] were adopted to grade subjective symptoms.^[14]

Table 2: VAS grading of symptoms before and after intervention

S N	Symptom	Before intervention	After intervention	Subjective observations
1.	Fatigue	8	2	Drastic improvement in reduction of fatigue was observed by 3rd follow up
2.	Polydipsia	7	3	-
3.	Hunger	5	8	Improvement in hunger helped her relieve from bloating of abdomen
4.	Sleep	6	9	Days after good sleep helped her

				remain energetic the next day
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Laboratory investigations were carried at Clinical laboratory of CARI, Bengaluru.

Table 3: Laboratory investigations results before and after intervention

SN	Tests done	Baseline observations (25/07/2022)	Endline observations (05/12/2022)	Method
1.	Fasting Blood Sugar (Plasma)	240 mg/dl	170 mg/dl	Trinder
2.	Fasting urine sugar	1%	Nil	Semi-automated urine strip analysis
3.	Post Prandial Blood Sugar (Plasma)	365 mg/dl	306.8 mg/dl	Trinder
4.	Post prandial urine sugar	1.5%	1%	Manual dipstick method
5.	HbA1c	11.5%	8.08%	HPLC

DISCUSSION

Amalaki Svarasa (fresh juice of *Phyllanthus emblica* fruits) is the drug's most potent dosage form, and it is best to take it on an empty stomach first thing in the

morning^[15] to maximise drug metabolism.^[16] *Svarasa* form was therefore suggested as an intervention.

Amalaki Svarasa (juice extract of *Phyllanthus emblica* fruits) has been suggested as a single medication therapy for the treatment of *Prameha* (Diabetes mellitus).

Amalaki is the most opted single drug intervention mentioned in many *Prameha Chikitsa Grantas* (texts mentioning treatment protocol for diabetes). It has been enumerated to manage all pathological types of *Prameha* (diabetes). *Amalaki Svarasa* has been usually combined with any other adjuvant ingredients such as *Haridra* (turmeric) or *Madhu* (Honey) almost in every available reference (Table - 1). Due to unavailability of pure honey and fresh turmeric in this study it was not advised to the patient. Also, these ingredients have been mentioned as an adjuvant to *Amalaki Svarasa*, hence knowing *Amalaki's* independent efficacy also would add value. *Nishamalaki* was given in tablet form to this patient to ease the treatment compliance although in classical texts dosage form of *Nisha* and *Amalaki* formulation is different (Table - 1). The anti-inflammatory, antioxidant, and free radical-scavenging properties of *Phyllanthus emblica* fruit extracts may be a key factor in the fruit's efficacy in reducing hyperglycemia. This economical medicinal fruit has the potential to eventually show to be an incredibly beneficial antidiabetic medication because, in addition to its non-toxic insulin releasing and insulin-like properties, it can also make up for the mineral deficiencies that develop in diabetes due to osmotic diuresis.^[6]

Table 4: Formulation with *Amalaki* as a main ingredient or single ingredient in management of *Prameha*.

SN	Text name	Reference	Ingredients	Botanical name	Adjuvant	Dosage form	Indications in <i>Shloka</i> and its translation
1.	C.D. ^[7]	35 th chapter –25 th <i>Shloka</i>	<i>Amalaki Svarasa</i>	<i>Phyllanthus emblica</i> L.	<i>Madhu</i>	<i>Svarasa</i>	<i>Sarva Mehahara</i> (controls all <i>Prameha</i>)
2.	H.S. ^[8]	<i>Prameha Chikitsa</i> - 28 chapter - 43 / pg 390	<i>Amalaki Svarasa</i>	<i>Phyllanthus emblica</i> L.	<i>Madhu</i>	<i>Svarasa</i>	<i>Sarva Meha Nivaranam</i> (controls all <i>Prameha</i>)

3.	S.G. ^[9]	<i>Madhyama Khanda-1st chapter - 7th Shloka</i>	<i>Dhatri Svarasa, Haridra Churna</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Madhu</i>	<i>Svarasa</i>	<i>Sarvapramehajit (controls all Prameha)</i>
4.	G.N. ^[10]	<i>Kayachikitsakhanda -30th chapter -56th Shloka</i>	<i>Dhatri Svarasa, Nisha (kalka or churna)</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Kshoudra</i>	<i>Svarasa</i>	<i>Sarvaprameha (in all prameha)</i>
5.	G.N. ^[10]	<i>Kayachikitsa Khanda -30th chapter -74th shloka</i>	<i>Dhatri Svarasa, Haridra Churna</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Madhu</i>	<i>Svarasa</i>	<i>Alpaihi Divasaihi Prameha Samjnan Akhilan Vikaran Nihanti</i> <i>(In few days of consumption, every complications of Prameha is stopped)</i>
6.	G.N. ^[10]	<i>Kayachikitsa khanda-30th chpt - 75th shloka</i>	<i>Dhatri phala kvatha, Haridra kalka</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Makshika</i>	<i>Kvatha</i>	<i>Prameha hrit (eradicates Prameha)</i>
7.	G.N. ^[10]	<i>Kayachikitsa khanda-30th chpt - 90th shloka</i>	<i>Amalaki svarasa, Haritaki churna</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Madhu</i>	<i>Svarasa</i>	<i>Dukhasanghatam Prameharogam Niyamena Harati (complications of prameha are managed)</i>
8.	B.R. ^[11]	<i>37th chpt - 6th & 7th shloka</i>	<i>Dhatri svarasa, Nisha (kalka or churna)</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Kshoudra</i>	<i>Svarasa</i>	<i>Sarva meahara (controls all prameha)</i>
9.	A.C. ^[12]	<i>38th Kirana – 23rd shloka</i>	<i>Dhatri svarasa, Nisha (kalka or churna)</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Kshoudra</i>	<i>Svarasa</i>	<i>Sarva meham hanti (stops all prameha)</i>
10.	<i>Shata Shloka</i> ^[13]	<i>6th chapter –173rd shloka</i>	<i>Dhatri kvatha, Haridra churna</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Madhu</i>	<i>Kvatha</i>	<i>Meha (in Prameha)</i>
11.	C.K. ^[14]	<i>17th chapter –296th shloka</i>	<i>Dhatri kvatha, Haridra (kalka or churna)</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Makshika</i>	<i>Kvatha</i>	<i>Prameha hrit (eradicates Prameha)</i>
12.	C.D. ^[7]	<i>35th chapter –21st shloka</i>	<i>Dhatri svarasa, Nisha (kalka or churna)</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Kshoudra</i>	<i>Svarasa</i>	<i>Sarva meahara (controls all Prameha)</i>

13.	Y.R. ^[15]	<i>Prameha chikitsa – 1st shloka</i>	<i>Dhatri svarasa, Nisha kalka</i>	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Makshika</i>	<i>Svarasa</i>	<i>Sarvamehajith (controls all Prameha)</i>
14.	K.K. ^[16]	<i>11th Parichada- 34thshloka</i>	<i>Nisha Churna, Amalaki Svarasa</i> is mixed and placed in an earthen pot and kept for fermentation	<i>Phyllanthus emblica L., Curcuma longa L.</i>	<i>Makshika</i>	<i>Arishta</i>	<i>Mehan Nihanti (stops Prameha)</i>

Column: C.D.- Chakradatta; H.S.- Harita Samhita S.G.- Sharangadhara samhita; G.N.- Gadanigraha; B.R.- Bhaishajya Ratnavali; A.C.- Abhinava Chintamani; C.K.- Chikitsa Kalika; Y.R.- Yogaratnakara

“*Labhodayo Hi Shastanam Rasadinam Rasayanam*” is the definition of *Rasayana*.^[17] A medicament which can harmonise all bodily parameters. *Amalaki* is a *Rasayana Dravya* capable of bringing about this action. Hence capable of improving sleep, hunger and reducing fatigue in this particular patient.

Maha Vangeshvara Rasa was selected as it has *Vanga* as its main ingredient.^[18] *Vanga* is choice of drug in *Sarva Prameha* (all urinary disorders including Diabetes).^[19] *Rasausadhi*'s inherent advantages, such as their fast action, low dosage, tastelessness, long shelf life, and enhanced palatability, have helped meet both patient and pharmaceutical stakeholders.^[20]

Amrutottara Kvatha contains *Amruta (Tinospora cordifolia* Linn.) - 6 parts, *Haritaki (Terminalia chebula* Linn.) - 4 parts and *Nagara (Zingiber officinale* Linn.) – 2 parts as its ingredient. Even though the formulation is indicated in *Jvara Chikitsa* (treatment for fever),^[21] due to its capacity to do *Ama Pachana* (digesting of toxic by product generated due to improper or incomplete digestion) in this patient it was selected to set right *Rasa Dushti* (impairment of primary bodily fluid of digested food) and for *Ama Pachana*. This could have been primary reason for improvement in hunger by improving digestive fire.

According to research, using *T. cordifolia* extracts significantly raised the levels of insulin and c-peptide in addition to having an ameliorative and insulin secretagogue effect.^[22] According to studies, *T. chebula*

reduces blood sugar over an extended period of time and does so most likely by increasing the amount of insulin that the Langerhans cells secrete or by using an additional pancreatic mechanism.^[23] According to a research study, alloxan-induced diabetic rats' damaged pancreas might be repaired as well as their elevated serum glucose levels by using ginger aqueous extract.^[24]

Decrease in glucose parameters shows that the holistic *Ayurveda* treatment protocol was effective in doing *Prameha Samprapti Vighatana* (stopping the pathology from progressing). Fasting Blood Sugar reduced from 240 mg/dl to 170 mg/dl, Post Prandial Blood Sugar reduced from 356 mg/dl to 306.8 mg/dl, Fasting Urine Sugar reduced from 1% to nil, Post Prandial Urine Sugar reduced to 1.5% to 1% and HbA1C reduced from 11.5% to 8.08%.

CONCLUSION

Holistic *Ayurveda* treatment protocol was effective in managing *Prameha Samprapti* (Diabetes mellitus). Both subjective and objective parameters showed good improvement. Sleep and hunger improved. Polyuria, polydipsia and fatigue reduced. Fasting Blood Sugar reduced from 240 mg/dl to 170 mg/dl, Post Prandial Blood Sugar reduced from 356 mg/dl to 306.8 mg/dl, Fasting Urine Sugar reduced from 1% to nil, Post Prandial Urine Sugar reduced to 1.5% to 1% and HbA1C reduced from 11.5% to 8.08%. Larger population study has to be done to get proper validation.

CONSENT

For publication, written informed consent has been obtained from patient.

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