



EFFICACY OF *HARIDRADI VATI* IN THE MANAGEMENT OF PREDIABETES- A CASE REPORT

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ABSTRACT

Introduction: The early stage of Type-2 Diabetes mellitus is known as Prediabetes. It is the state in which blood glucose levels are higher than normal but not high enough to be called diabetes and is strikingly resemble with the *Purvarupa* of *Prameha* (a stage in which polydipsia, Burning -sensation in the palm and sole, numbness in palm and sole, Fatigue, etc. are predominant) which are found prior to progressing to Type 2 Diabetes mellitus. **Materials & Methods:** A 50 years old female patient came to OPD with complains of *Hasta pada kar daha*, *Hasta pada suptata*, Fatigue, *Shrama swasa* since 6 months. *Haridradi vati* was given in a dose of 500 mg twice a day before meal with luke warm water for eight weeks along with diet and life style modification. Laboratory investigations were done before and after the treatment. **Result:** After eight weeks of intervention; there was 14% decrease in IFG level and 28% and 24% decrease in OGTT after 1 hour and 2 hours respectively. **Conclusion:** As per this case study, it can be said that *Haridradi vati* could be used in the management of Prediabetes along with some diet and life style modification.

KEYWORDS: Prediabetes, *Prameha purvarupa*, *Haridradi vati*.

INTRODUCTION

Prediabetes is an intermediate state of hyperglycemia with glycemic parameters above normal but below the diabetes threshold.^[1] Faulty diet like excessive consumption of fatty diet along with lack of physical and mental exertion along with heavy day sleep had contributed a significant role in the rise of prediabetic and diabetic patients and the incidence of diabetes along with other non-communicable disease is increasing at alarming rate. Observational evidence suggests as association between prediabetes and complications of diabetes such early nephropathy, small fiber neuropathy, early retinopathy and risk of macrovascular disease.^[2,3] Several studies have shown efficacy of lifestyle interventions with regards to diabetes prevention with a relative risk reduction of 40%-70% in adults with prediabetes.^[4,5] Global prevalence Impaired glucose tolerance in 2015 is 6.7% and number of people with impaired glucose tolerance is 318 million.^[6] There are estimated 77.2 million people in India who are suffering from Prediabetes.^[7] There is increasing evidence to prove the efficacy of pharmacotherapy in prevention of diabetes in adults with prediabetes, pharmaceutical treatment options other than metformin are associated with adverse effects that limit their use for prediabetes. Long term cost effectiveness of such interventions and the end point of therapy remain unclear.

Jatilibhav keshasu (Matting of hairs of head), *madhurya asasya* (sweet taste in the mouth), *karpadayaosuptatadaha* (loss of sensation (numbness), and burning sensation in hands (palms) and feet (soles), *mukhtalukhanthashosh* (dryness of the mouth), palate and throat; *pipasa* (increased thirst), *alasya* (laziness), *malakaye* (accumulation of waste products in the body), *kayachidrasu upedhe* (coating of the orifices of the body with wastes), *paridaha, angheshusuptata* (burning sensation and numbness in body parts) ; *shatpadpipalikacha sharir mutrabhisaran* (bees (flies) and ants swarm on the body and urine), *mutrache mutradoshan* (turbid urine), *vistra sharir gandha* (foul smell), *nidra tandra sarvakala* (excessive sleep and stupor at all time), these are premonitory symptoms mentioned in *Ayurvedic* literature as *Prameha Purvarupa* and can be correlated with Prediabetes. *Purvarupa* is the earliest symptom of the disease. When *purvarupa* get manifested, the disease is still in an unripe, developing form. This is the best time to intervene in the disease process by administration of comprehensive treatment. Though *Ayurveda*, heritage of Indian medical science is full of illustration of dietetic code and life style intervention for healthy and diseased; but very little is known to the Indian society regarding the out most importance of following these conducts of food and daily routine. Diet awareness among

prediabetic patients, regarding the deleterious effects of an unhealthy diet (high intake of fat, sugar and salt) along with the effects of sedentary life style is need of the society. As risk factors like dietary choices, overweight and sedentary life style are modifiable, it is need for providing diabetic subjects with knowledge regarding following a good life style where various aspects regarding daily regime including of dietetic habits, sleep habits, bowel habits, importance of consumption of different low fat, high fibre recipes and daily physical exercises may be introduced. Awareness among Diabetics regarding this may urge them to adopt other means through which the patients may adopt healthy diet which may help to manage the diabetes and at the same time also have good control over blood

glucose and lipid levels. This regimen of diet and life style intervention can be adopted in Community based health education programs so that maximum people in the society who are prediabetes or diabetic can get benefited.

In present case *Haridradi vati*^[8] comprising of *Haridra* (*Curcuma longa* L.), *Daruharidra* (*Berberis aristata* D.C.), *Kutaja* (*Holarrhena antidysenterica* (L.) Wall.), *Vacha* (*Acorus calamus* Linn.), *Musta* (*Cyperus rotundus* Linn), *Devdaru* (*Cedrus deodara* Roxb), *Shunthi* (*Zingiber officinale* Rosc) and *Haritaki* (*Terminalia chebula* Retz.) was formulated which belongs to both *Haridradi Gana* and *Vachadi Gana* that was found to be useful in the management of prediabetes.

Table 1: Composition of Haridradi Vati

Sr.	Ingredient	Botanical /English name	Part used	Ratio
1.	Haridra	<i>Curcuma longa</i> Linn	Kanda	1 Part
2.	Daruharidra	<i>Berberis aristata</i> DG	Moola	1 Part
3.	Kutaja	<i>Holarrhena antidysenterica</i> Wall	Tvak	1 Part
4.	Vacha	<i>Acorus calamus</i> Linn.	Moola	1 Part
5.	Musta	<i>Cyperus rotundus</i> Linn	Moola	1 Part
6.	Devadaru	<i>Cedrus deodara</i> Roxb	Kandasara	1 Part
7.	Shunthi	<i>Zingiber officinale</i> Rosc.	Kanda	1 Part
8.	Haritaki	<i>Terminalia chebula</i> Retz.	Shushka phala	1 Part

CASE REPORT

A 50 years old female patient came to Kayachikitsa OPD (Registration no. PG19001277) on 24/01/2019 with main complain of *Hasta pada tala daha, Kara pada suptata, Fatigue, Shrama swasa*. There was no any past history of long term illness or any history of long term medication. She had a history of faulty dietary habits and sedentary life style. She used to take non-veg diet one to two times per week. The treatment was started from 24/01/2019 with consent.

Clinical findings

She had 64 kg body weight and 142 cm height with BMI 32.4 Kg/m². Pulse rate was 72/min, Respiratory rate was 18 / min, and blood pressure was 140/90 mmHg. No abnormality was noticed in the functioning of Respiratory, Circulatory, and Digestive system.

Dashavidha pareeksha (~Tenfold examination)

Patient was having *sharirika Prakriti* (~ physical constitution) as *Pitta-kapha* and *Manasika Prakriti* (~ mental constitution) as *Rajasika-Tamasika*; *Vikriti* (~morbidness) was with *Kapha Dosh*; *Rasa, Rakta, Mamsa, Meda* were *Doosha*; *Rasa-Rakta-Meda-Sweda Sarata* (~essence of all Dhatus); *Madhyama Samhanana* (~compactness); *Pravara Pramana* (~anthropometry); *Madhyama Satmyata* (~suitability or homologation); *Madhyama Satva* (~psyche); *Aharashakti* (~intake of food) with *Pravara Abhyavaharan Shakti* (increased intake of food) and *Pravara Jarana Shakti* (increased digestive fire); *Agni* was *Tikshna* (overheated digestion); *Avara Vyayama shakti* (~ decreased capacity of exercise).

Ashtavidha pareeksha (~Eightfold examination)

Ashtavidha pareeksha showed that her Nadi (~pulse) was 80/ Min, passing of hard stool occasionally; *Mutra* (~urine frequency) was regular, *Jivha* (~tongue) was *Sama* (~coated tongue), *Shabda* was *Guru swara*, *Sparsh* (touch) was *Snigdhnaga*; *Drika* (eye) was *Pandura* (~pallor), *Akriti* (~built) was *Sthoola* (~obese).

Sroto pareeksha (~Examination of body channels)

Investigations

Hemoglobin percentage, total leucocyte count, red blood counts, fasting blood sugar, Oral glucose tolerance test and lipid profile, were done before and after the treatment. Stool-urine routine and microscopic were done before therapeutic intervention.

Diagnosis

As per above history and laboratory parameters like FBS, OGTT (Oral glucose tolerance test); patient was diagnosed as Prediabetes.

Management

Therapeutic intervention

The drugs from *Haridradi gana* and *Vachadi gana* were selected and given in *Vati* (tablet) form to patient. *Haridradi vati* was prepared by taking mentioned ingredients in proposed proportions in the Pharmacy.

Posology of Haridradi vati

Vati (2 gm, each of 500 mg) was given orally, *Pragbhakta* (~before meal) two time with *Ushnodaka* (~luke worm water) as *anupana* (Vehical) for eight weeks

with weekly follow up. Patient was advised to follow the diet and lifestyle changes along with medication.

Assessment Criteria

Improvement was assessed on the basis of percentage relief observed in presenting complaints following grading criterion was adopted to assess the effectiveness of therapy.

Table 2: Grading criteria.

Sr.	Parameters	Grade
1	<i>Hasta-Pada-Tala Daha</i>	
	No Daha	0
	Hasta -Pada-Tala Daha found occasionally, mild, bearable	1
	Hasta -Pada-Tala Daha continuous but bearable & not severe	2
	Hasta -Pada-Tala-Daha continuous and severe & unbearable	3
2	<i>Kara-Pada-Tala-Supti</i>	
	No <i>Supti</i>	0
	<i>Kara-pada-tala-Supti</i> incontinous	1
	<i>Kara-pada-tala-Supti</i> continuous but not severe	2
	<i>Kara-pada-tala-Supti</i> continuous and severe	3
3	Fatigue (Generalised weakness)	
	No fatigue	0
	Noticeable fatigue, not affecting daily routine	1
	Noticeable fatigue, moderately affecting daily routine	2
	Noticeable fatigue, markedly affecting daily routine	3
4	No fatigue	4
	Shrama Swasa (Dyspnoea)	
	Dyspnoea after heavy work and walking	0
	Dyspnoea after moderate work and walking	1
	Dyspnoea after mild work	2
	Dyspnoea even at resting condition	3

RESULTS AND DISCUSSION

The state of prediabetes is similar to the early stage of *prameha* which is caused by *Santarpana Karaka Hetu* and has mainly involvement of vitiated *Kapha, Meda, and Kleda* along with disturbed *Agni*. Hence drugs which have *Tikta, Katu Rasa, Ushna Virya, Laghu, Ruksha Guna* and *Kapha Medohara* action can reverse the pathogenesis of *Apathyanimittaja Prameha*. Drug mention in *Haridradi Gana* and *Vachadi Gana* have *Tikta, Katu Rasa, Ushna Virya, Laghu, Ruksha Guna* and *Kapha Medohara* properties. The ingredient of the *Haridradi vati* it have *Tikta-katu* rasa (bitter- pungent taste), *Ruksha-laghu guna* (dry-light properties), *Ushna veerya* (hot potency), *Katu vipaka* (~ catabolic bio-transformation) hence they together have *Kapha-medohara* (~removes and dries up excess *Meda*) properties along with *Lekhaniya* (~scrapes excess *Meda*) and *Dipaneeya* (~increases the *Dhatvagni*) action.

After eight weeks of intervention of *Haridradi Vati* it was found that there was complete improvement (100%) in complaints like *Hast pada tala daha* (Burning sensation in both hands and feet), *Kara pada tala suptat*, *Shrama swasa*, *Fatigue*. It was noted that there was significant improvement in laboratory parameters like 14% in FBS, 28% in OGTT after 1hr and 24% in OGTT after 2 hr, 46% improvement in Serum Triglycerides, 45

% improvement in Serum VLDL whereas 13% improvement in Serum HDL was also observed.

Haridradi Vati is effective possibly due to its *kapha-medohara* properties, helped in improving *Dhatvagni* thus improved the fat metabolism, thus there was marked improvement in the laboratory parameter.

Table 2: Effect on laboratory parameters.

Parameters	Before treatment (24/01/2019)	After treatment (21/03/2019)
Hb (Gm %)	13.6	13.5
RBC (Millions per cubic mm)	4.99	4.83
WBC (Per cubic mm)	8800	8200
FBS (mg/dl)	104	89
OGTT 1 HR (mg/dl)	187	135
OGTT 2 HR (mg/dl)	160	121
S. Cholesterol (mg/dl)	195	199
S. Triglyceride (mg/dl)	290	158
S. HDL (mg/dl)	39	44
S. VLDL (mg/dl)	58	32

Hb: Hemoglobin; RBC: Red blood counts; WBC: White blood counts; FBS: Fasting blood sugar; HDL: High density lipoproteins; LDL: Low density lipoproteins; VLDL: Very low-density lipoproteins.

CONCLUSION

Ingredients of *Haridradi vati* are easily available and very cost effective. This case study shows that *Haridradi vati* along with diet and lifestyle modification is effective regimen for Prediabetes. This case report can be useful in future studies related with Prediabetes. It can also be concluded that following lifestyle modification Prediabetes can be reverted.

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