

## **An Ayurvedic Approach for management of Pre diabetes: A Case Study**

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### **Abstract**

Modern lifestyle has brought in many diseases and disorders. They are commonly called as Lifestyle disorders. Diabetes is one of it very commonly found in India. In recent years there has been a alarming rise in diabetic patients. WHO has currently stated that there is an intermittent state between a normal person and a person diagnosed as diabetic. And this is the stage which can be reversed if diagnosed and treated early. Ayurved ancient text had already written about this stage where 20 types of prameha are mentioned out of which 10 are curable 6 types difficult to cure and last 4 types non curable.[1] Prediabetes is condition where blood glucose level are higher than normal but not high to be labeled as Diabetes.[2]This is many times a reversible condition from where the further progress of the disease can be arrested and normal metabolism can be achieved. Before the onset of Diabetes type 2 most of the people are always in stage Prediabetes condition where Blood sugar levels are higher than normal but not yet that high to be diagnosed as Diabetes. This condition is also referred as Impaired glucose tolerance (IGT) or Impaired fasting Glucose (IFG)[3]. A 40 year old female visited the OPD in department of Kaya Chikitsa, MIAER Mandsaur Madhya Pradesh with complaints of tiredness, weight gain with severe lethargy. After clinical examination and investigation done on basis of clinical examination she was diagnosed as a case of Pre Diabetes. She was treated with Dravaydi Capsules for 90 days. After completion of treatment her blood sugar levels returned to normal along with weight loss from 81 kg to 74.5 kg and she also revived her energy levels.

**Keywords:** Prameha, Pre-Diabetes, Diabetes, Reversible

### **Introduction**

Diabetes is defined as a condition with abnormal blood sugar levels. Blood sugar levels can be abnormal in fasting state or in post lunch (after 2 hours) /Post prandial. Today Diabetes is becoming a severe silent threat to human mankind. It is also considered a major risk factor for heart diseases mainly coronary artery disease (CAD) due to atherosclerotic pathological changes. India today is the second highest country to have diabetic patients. Sedentary life style lack of

day to day exercise and bad eating habits have brought in the metabolism changes in human body. Prameha in Ayurved is mentioned as Santarpanajanaya vyadhi which means diseases originating due to excessive nourishment or due to improper nourishment. This kind of nourishment is also a major cause of Obesity which in turn leads to many metabolic diseases /disorders. Obesity also known as Sthaulya is mentioned by Acharya Charak as Asthaunindit vyadhi. Ati krusha is preferred with respect to Ati Sthaulya. Acharya Charak clearly indicating that there are many un evitable diseases/ disorders following Over weight. Virudha Ahara sevan is also one of the common factors seen in day to day life style, especially the young and middle age group.[4] Virudha Ahara sevan results in Vitation of jataharagni which slowly reaches to Dhatu level causing Dhatu agnimandhya. Modernization has resulted in rat race. Fast growing instability in socio economic structure is increasing stress levels leading to anxiety which in turn causes many disturbed sleep patterns and digestion related problems. Prediabetes is an intermediate state of hyperglycemia with blood sugar levels above normal but low to be labeled as diabetic.[5]

### Case Report

A 40 year old female visited the OPD in department of Kaya Chikitsa MIAER Mandsaur Madhya Pradesh with complaints of tiredness, weight gain with severe lethargy. These complaints were present from last 8-10 months. On taking history it was revealed that patient was gaining weight and tiredness is also increasing. There was no history of Hypertension. There was no history of Hypothyroidism. General examination: Blood pressure 120/80 mm of Hg. Her weight was 81 Kg with height 150 cm, Body mass index (BMI) 36 Kg/m<sup>2</sup> [6]. Personal history revealed that she consumed a non vegetarian food 4-5 times in week, mostly in dinner. She use to take day time naps which extended for 2 hours daily on regular basis. She was also having a habit of Adhyashana (which means to eat food even before the previous consumed food is not digested) She had complaints bahumootrata mootra pravrutti ranged from 6-8 times in day (Polyuria), Nakta mootrata : mootrapravrutti from 3-5 times a night, Trushna (Polydipsia) and Mukhashosh (Constant feeling of dryness in mouth and desire to drink water) Because of trushna her day to day water intake was ranging from 2.5 to 3.5 liters per day. Constant feeling of tiredness and desire to rest was noted in history taking. Without doing much of physical exercise she had urge to eat food and craving to eat sweet food. Prakruti parikshan revealed she had kapha dominant vata prakruti. Her Systemic examination was normal with CNS normal and CVS normal. Her Blood sugar levels Fasting 125mg/dl and Postprandial Blood sugar levels 195mg/dl. As per the WHO criteria is was diagnosed as Pre diabetic.

Prediabetes can be diagnosed with blood tests [7,2,3]

. Fasting Blood Sugar of 110 to 125 mg/dl (6.1mmol/L to 6.9 mmol/L) WHO criteria

. Fasting Blood Sugar of 100 to 125 mg/dl (5.6 mmol/L to 6.9 mmol/L) ADA criteria

Glucose tolerance test: Blood sugar level of 140 to 199 mg/dl (7.8 to 11.0 mM) 2 hours after ingesting a standardized 75 gram glucose solution.

Patient was labeled Prediabetic and treatment was started.

**Material and methods:**

Patient was subjected to treatment after taking the consent. Darviyadi capsules prepared from the herbs filled in capsules were administrated to patients in dosage of 2 capsules twice a day for a period of three months and a regular follow up was be done . Patient was a advised vegetarian diet regime.

**Darviyadi Capsules:** Each capsules contains aqueous extracts derived from equal quantity of following herbs [8] Daruharidra, 2) Devdaru, 3) Triphala, 4)Nagarmotha

**Observation and Results:**

After completion of 90 days treatment various parameters were assessed. Blood sugar level showed significant reduction along with body weight reduction and Body mass index change from 36 to 33.1 kg/m<sup>2</sup>.

Table : 1 Effect of treatment on following parameters:[9]

Symptom present	Before Treatment	After Treatment
Mukha Talukantha Shosha	Present even without exertion	Absent
Bahumootrata (Polyuria)	Increased frequency 9-10 times in day	Reduced to 5-6 times in day
Naktamootrata (micturition in night)	Frequency 2-3 times	Absent
Atishudha (Polyphagia)	Mostly hungry	Feel hungry at intervals
Trushna (Polydipsia)	Drinks 3.5 -4 liters of water	Reduced to 1.5 to 2 liters
Klam (Tiredness)	Completely exhausted	Energy levels increased
Karpada Suptata (Polyneuritis)	Very often	absent
Mukhmadhuraya	Daily morning present	Absent
Visra sharira Gandha	Sometimes present	Absent
Hastpad tal daha	Sometimes present	Absent
Mootra avilta (Turbidity in urine)	Turbid urine	Clear urine
Atisweda Pravrutti	Profuse sweating	Absent

Table 2: Effect of treatment on Blood Sugar level

Blood Sugar level	Before Treatment	After Treatment
Fasting	125mg/dl	100mg/dl
Post prandial	195 mg/dl	140mg/dl

Table 3: Effect of treatment on weight (Kg)

Weight	Before Treatment	After Treatment
	81 kg	74.5 kg

Table 4: Effect of treatment on Body mass index ( $\text{kg/m}^2$ )

Body mass index ( $\text{kg/m}^2$ )	Before Treatment	After Treatment
	36( $\text{kg/m}^2$ )	33.1( $\text{kg/m}^2$ )

### Discussion:

In Prediabetes blood sugar levels are higher than normal but not as high to be labeled as diabetes.[2] Hetu sevan causes the Agnimandhya (vitiation of Agni which lowers the digestion and results in causing of Ama dosha, a toxic element which causes hindrances in metabolism. Treatment mainly acts on the pathogenesis of the disease. Darviyadi Capsules not only does the samprapti vighatan but also works on the excess kleda generate due to pathogenesis. According to Ayurveda kleda is the main component which is excreted from the body via urine. [10].This excess kleda is a result of Dhatuagni mandhya. Darviyadi Capsules not only reduced the excess kleda in body but also improved the digestion at cellular level.

### Conclusion

Darviyadi Capsules (which contained aqueous extract of Devdaru, Daru haldi, Nagarmotha and Triphala.) can help in reducing Blood sugar levels and help in weight reduction and improving BMI.

### Conflicts of interest

There are no conflicts of interest.

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