

AYURVEDIC MANAGEMENT OF DIABETES MELLITUS AMONG CHILDRENS - A CASE REPORT

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ABSTRACT

Type 1 diabetes (T1D) is an autoimmune disease. The global prevalence of T1DM is estimated to range from 0.8 to 4.6 per 1000 population. In most cases, the prevalence is higher, at 1–1.5 per 1000. None other than insulin therapy is available for treatment of diabetes mellitus type-1. Present case focuses on case study of a 5-year-old male child having diabetes mellitus type-1 treated with an Ayurvedic formulations and panchakarma therapy. After 30-day treatment reduction in fasting and in post prandial blood glucose was seen. Insulin dose reduced from 8 units/day to 4 units/day. Reduction was seen in HbA1c level after 2 months of regular medication and dietary modification.

KEYWORDS: diabetes mellitus type 1, HbA1c, blood glucose, ayurvedic medicine.

INTRODUCTION

Diabetes mellitus is a metabolic disease due to multiple etiology and it affect the entire system of the body. Diabetes mellitus is rapidly becoming the world's largest silent killer. Diabetes mellitus is a metabolic disorder characterized by chronic hyperglycemia resulting from decreased insulin secretion or inadequate action. Persistent hyperglycemia causes damage to several organs and body systems, including the kidneys, eyes, and cardiovascular system.^[1]

T1D, also known as juvenile diabetes or insulin-dependent diabetes, represents the second most prevalent form of diabetes, accounting for approximately 5–10% of all diagnosed cases.^[2] It has been reported that there are over 65,000 new cases of T1D in children worldwide each year, with the incidence rate increasing by approximately 3% annually.^[3]

There are many forms of diabetes but the most common are.

- 1. Type 1 Diabetes-** It is also called Insulin-dependent Diabetes mellitus or Juvenile diabetes. There is a loss in the production of Beta cells that are responsible for insulin production.
- 2. Type 2 Diabetes-** It is non-insulin-dependent or adult-onset diabetes. A reduced insulin secretion can lead to insulin resistance due to which the body is unable to use the insulin in the proper amount.
- 3. Gestational Diabetes-** This type occurs as a result of hormone change during pregnancy. Obese pregnant females are at high risk of this type of Diabetes.

As we know Maturity onset diabetes of Young (MODY) is subtype of Type 2 DM characterized by single gene defect with autosomal dominant inheritance and presents in young age (20-25years).^[4]

Pathophysiology

Normally, insulin is released in the body in response to a sugar uptake of glucose and conversion of glucose to glycogen. Similarly, it also promotes fatty acid synthesis and protein formation acting as an anabolic hormone. Insulin deficiency results in hyperglycemia as there is decreased glucose uptake by muscle and other cells and increased glycogenolysis, lipolysis and gluconeogenesis. The increased blood glucose exceeds the absorptive capacity of kidneys that manifests as glycosuria. In addition, advanced glycation end-products get formed that lead to end-organ damage. The hyperglycemia also stimulates release of free oxide radicals, to result in oxidative stress and tissue damage.^[1]

Case History

A 5-year-old male patient came to outpatient department of kaumarbhritya, Patanjali ayurveda hospital Haridwar, with complaints of fatigue, weakness, polyuria, polydipsia, and polyphagia since last 7 months.

On taking detailed history of illness, the patient found to have type 1 diabetes mellitus. He

was on insulin therapy at a dose of Regular Insulin -4-4-4 units TDS and Long Acting insulin at 8 units at night.

Clinical Findings

General Examination

Nourishment: Moderately nourished

Respiratory rate: 16 / min

BP: 120/70mm Hg

Height: 113 cm

Weight: 16.3kg

Heart rate: 78/min

Diet History: The diet history of the patient shows that he consumes milk daily at night time and sometimes takes fried food etc. He also skips his meals many times.

Drug History: The patient had no history of any other medical condition.

Family History: The patient's father was suffering from Type 2 Diabetes.

Findings

1. General Assessment

There was no history of any serious sickness in the patient. His pulse rate was 74 beats per minute and his blood pressure was 116/82 mmHg. He had to go for micturition very often.

2. Local Inspection

The patient had no severe deformity.

3. Systemic Investigation

The patient was aware of the date, time, and location. His respiratory and cardiovascular systems were also normal. At rest, the respiratory rate of the patient was 16 breaths per minute.

The findings of the eightfold examination were as follows.

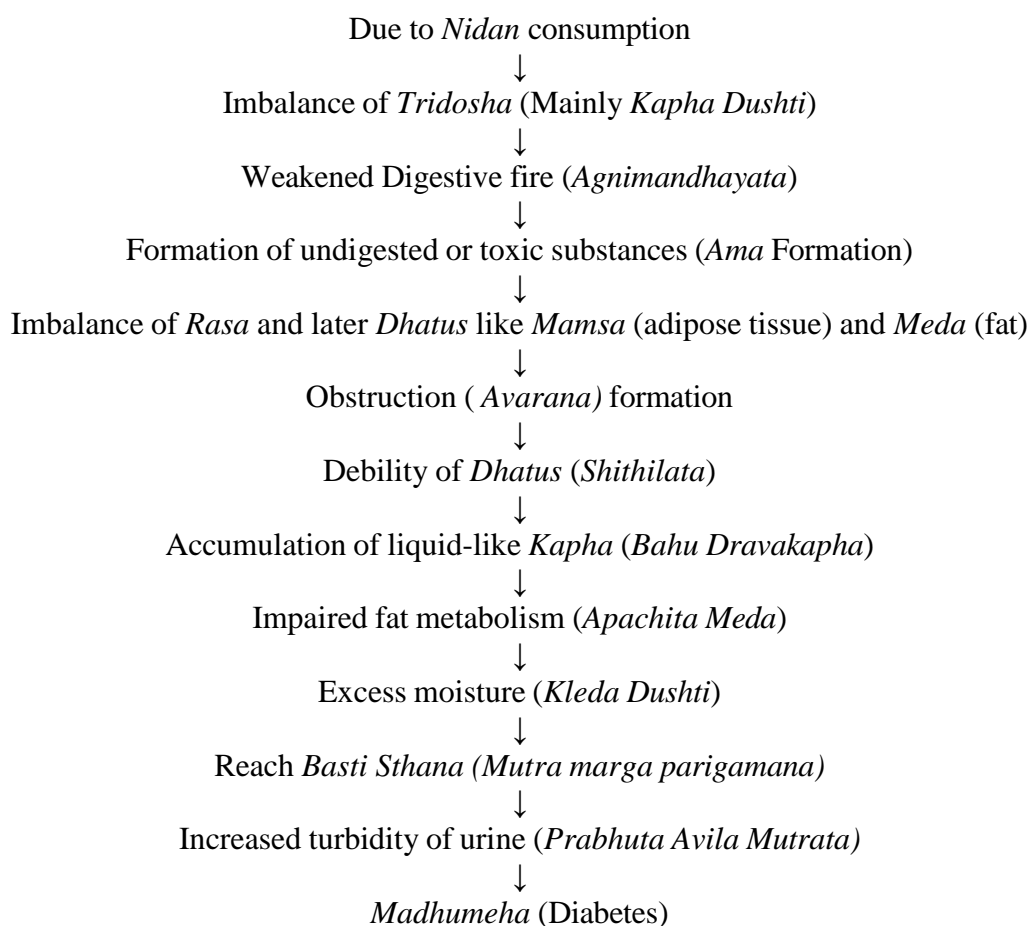
- *Nadi* (Pulse) *Vata Pradhan* and *Kaphanubandhi*
- *Mutra* (Urination) frequency is more (8-9 times per day) and *Mala* (Bowel) were normal
- *Jivha* (Tongue) Normal

- *Shabda* (Speaking) was normal
- *Drik* (Vision) was normal (6/6 in both eyes)
- *Akriti* (Built) was normal

Dashvidha Pariksha

Patient had *pitta kapha prakruti*, *bahu drava shleshma vikriti*, *Madhyama sara*, *samhanana* and *pramana*, *avara satmya* (taking curd, lassi, milk, biscuits bread items on daily basis), *Madhyama satva*, *koshtha* and *aharashkti*, *avara vyayamashakti* (easily get tired on regular activities like climbing stairs) and *bala vaya*.

Samprapti



Investigation

In December 2024,

Average blood glucose-332.14 HbA1c-13.2%

GAD-65 Antibody type 1 diabetes- positive (40.17) IU/ml Urine- pH- 6.0, clear, no protein present, glucose +++

C peptide-0.16ng/ml

Oral Medication

NAME	DOSE	MODE OF ADMINISTRATION
Divya Chirayata Kwatha Divya Giloy Kwatha	25ml	Twice a day empty before meals in morning and evening
Divya Madhunashini Vati extra powder	1-1-1	Take 1 tab 30 minutes before breakfast lunch dinner with lukewarm water
Patanjali Giloy Ghan Vati	1-1-1	Take 1 tab 30 minutes before breakfast lunch dinner with lukewarm water
Divya Madhugrit Tab	1-1-1	Take 1 tab 30 minutes after breakfast lunch dinner with lukewarm water

Madhunashini vati contains key ingredients *giloy methi, kalmegha, karela, neem* etc.

Giloy- cures indigestion, thirst, polyuria, anemia, etc.

Karela pacifies all three doshas

Methi has pungent and bitter tastes with qualities of lightness and unctuousness; hot potency and katu vipaka.

Kalmegha has an ability to pacify kapha and pitta doshas.

Madhugrit has key ingredients like *chardraprabhavati, giloy, chirayata, karela, and shudh shilajit*.

Panchkarma Therapy

The patient was advised to have *panchakarma* therapy along with oral medication for 7 days and then blood glucose was monitored. The *panchakarma* included.

1. *Sarvanga abhyanga* with *ksheer bala taila*
2. *Nadi sweda* with *dashmool kwath*
3. *Matra basti*- with *Giloy kwath(20ml), kutki, chirayat kwatha(20ml)+ triphala taila(10ml), madhunashini vati- 3 tab - 50ml*

Diet Indication

Patient advised to have an active lifestyle with regular walking for 15-20 minutes and medicines were prescribed. Also advised to continue the admission for a week and monitor the glucose, to avoid any complications.

Yoga asana- Surya namaskar, Paschimottanasana, Halasan, Sarvangaasana, Dhanurasana, Vrikasana.

Diet Chart

The patient followed diet chart mentioned below.

Time		Meals
6 am		Chirayata kwath /giloy kwath/ methi infused water
9 am	Breakfast	Daliya/sprouts/moong dal cheela/vegetable soup
11 am	Mid snack	Dry fruits/fruits
2 pm	Lunch	A bowl of daal,mix veg,1-2 multi grain chapati,salad
5 pm	Snack	Chiryata kwath/methi infused water
8 pm	Dinner	A bowl of daal,mix veg,1-2 multi grain chapati

Results and Follow up

1st Follow-up Results (After 30 days):- The patient reported that he was doing well after taking 1st month medications.

2nd Follow-up Results (After 60 days):- After taking 2nd month of medications, the patient found some relief in his symptoms and insulin dosage was reduced from 4-4-4 TDS regular insulin to 2-2-2 TDS and long acting insulin got from 8 unit to 4 unit at night.

SR.NO.	TIME/DURATION	Patient's condition before Ayurveda's treatment	Patient's condition after Ayurveda's treatment
1.	22/DEC/2024	Average blood glucose (ABG) -332.14 mg/dl	
2.	2/FEB/2025		ABG-250 mg/dl
3.	8/APR/2025		ABG-160 mg/dl

DISCUSSION

This case study underscores the role of Ayurveda in managing Type 1 Diabetes Mellitus. Ayurvedic interventions, including the use of drugs like *Chirayata Kwatha*, *Giloy Kwatha*, *Madhunashini Vati*, *Giloy Ghan Vati*, *Madhugrit* Tab along with *panchkarma* therapy, dietary modification and active lifestyles shows the significant reduction in fasting and postprandial blood sugar levels and the normalization of urine sugar suggest that Ayurvedic therapies can be an effective complementary treatment for T1DM, especially when combined with conventional insulin therapy. *Sarvanga abhyanga* is done as *prameha* is *ras dhatukshay ajanya vikar* and *abhyanga* helps in *dhatu pusti*. *Ksheer bala taila* works on *vata dosha*. The drugs given in *matra basti* shows better absorption in body. Hence *panchakarma* also shows good result in diabetes mellitus type 1.

CONCLUSION

Ayurvedic treatment improved Blood glucose levels in Type 1 Diabetes patients. Frequent

urination became normal after taking Ayurvedic medicines. Ayurvedic treatment appears effective in the management of Type 1 Diabetes and increases hope for Diabetes patients. Ayurvedic medicines appear promising as compared to insulin therapy. In this clinical case study, the patient has shown positive symptomatic improvement during the management as his insulin therapy went low then before. With the help of Ayurvedic medicines, the patient gets relief from his symptoms. Ayurvedic formulations used in the management of Diabetes contain antidiabetic, antioxidant and anti-inflammatory properties. These properties are very helpful in lowering blood glucose levels and also manage the symptoms of Type 1 Diabetes.

Pathya-Apathya^[5]

Pathya: *Pathyapathya* described by *Acharya Charaka* under the management of *Prameha* in *Chikitsasthana* that shows its importance. Advised to take *Mudga Yusa* (green gram), Barley, Roti prepare with *Godhum* (Wheat), Bitter vegetable, *Kushodaka* (warm water) and regular exercise is recommended, *Pranayama* and *Yoga*.

Apathya: Advised to avoid milk.

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