



Research Article

Role of Vidangadi Kwatha in Madhumeha (Diabetes Mellitus Type II)

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Received: 12 August 2021; **Accepted:** 25 August 2021; **Published:** 06 September 2021

Citation: Premlata, Ram B, Vimlesh, Sachin Choudhary, Jitendra Khachariya. Role of Vidangadi Kwatha in Madhumeha (Diabetes Mellitus Type II). Archives of Clinical and Medical Case Reports 5 (2021): 629-633.

Abstract

Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycaemia. The two broad categories of DM are designed type 1 and type 2. Type 1 diabetes is the result of complete or near-total insulin deficiency. Type 2 DM is a heterogeneous group of disorders characterized by variable degrees of insulin resistance, impaired insulin secretion, and increased glucose production. Here a case of newly diagnosed type 2 diabetes mellitus in a patient who underwent 3 follow up of Vidangadi Kwatha delivered in 3 months is reported. After treatment, the patient's fasting blood glucose and post plasma blood glucose levels, as well as haemoglobin A1C level, were decreased. Further-more, no adverse effects were observed. The finding in this

clinical study are encouraging and provide evidence supporting the effectiveness of Vidangadi Kwatha in reducing type 2 diabetes mellitus in a patient.

Keywords: Vidangadi Kwatha; Type 2 Diabetes Mellitus; Madhumeha

1. Introduction

Diabetes is a serious, long-term condition with a major impact on the lives and well-being of individuals, families, and societies worldwide. It is among the top 10 causes of death in adults, and was estimated to have caused four million deaths globally in 2017. In 2017, global health expenditure on diabetes was estimated to be USD 727 billion [1].

The three main types of diabetes are type 1 diabetes (T1D), type 2 diabetes mellitus (T2D), and gestational diabetes mellitus (GDM). Since 2000, the Inter-national Diabetes Federation (IDF) has reported the national, regional and global occurrence of diabetes. In 2009 it was estimated that 285 million people had diabetes (T1D and T2D combined) [2], increasing to 366 million in 2011 [3], 382 million in 2013 [4], 415 million in 2015 [5] and 425 million in 2017 [1]. In Ayurvedic classics Madhumeha is described independently (Su.Chi.13 Madhumeha chikitsa) [6]. Madhumeha is the disease in which the excretion of urine is excessive and having quality similar to Madhu in its colour, smell, taste & consistency.

Chronic hyperglycaemia is associated with long term damage, dysfunction and failure of various organs like eyes, kidneys, nerves, heart, blood vessels. Marked hyperglycaemia may be present with symptoms like polyuria, polydipsia, polyphagia, weight loss, burning sensation in sole & palm, tingling sensation in body and sometimes blurred vision. The ayurvedic drugs (medicine) are looked upon as either single or in combination as adjuvant with conventional therapy for the management of diabetes. Treatment of diabetes with ayurvedic drugs is focused on controlling and lowering the blood glucose, protecting the target organs from damage and improving the quality of life. Vidanga, Haridra, Yastimadhu, Sunthi, and Gokshura are the ingredients of Vidangadi Kwatha. It is mentioned in Yogratnakar as Mehahara by Acharya Yogratnakar (Meha roga dhikar 39/71 [7]. It decreases fasting plasma glucose and 2 hr plasma glucose levels, as well as HbA1C level.

2. Material and Methodology

2.1 Case history

A 34 years old female belonging to low socio-economic status family was registered in O.P.D. No. 11, on 18-04-2019 at Sir Sundar Lal Hospital, B.H.U., Varanasi with M.R.D.No. 1465397. She studied up to intermediate and belongs to rural area and works as a house wife. She complained of micturation at night (5-6 times), since 3 months, she was having excessive hunger, excessive thirst, weakness, burning sensation in both sole & palm, and cramps in both legs. There was no family history of diabetes and no other systemic disease. She had not taken any anti-diabetic drug yet. All routine investigations done. CBC, Lipid profile, and LFT/RFT were normal but Fasting blood sugar (188.0 mg/dl), 2hr plasma glucose (216.3mg/dl) and HbA1c (7.5%) were increased.

Personal History-

Dietary Habits (Aahara): Irregular and Vegeterian

Appetite (Abhyavaran shakti): Increased

Digestive Power (Jaran Shakti): Good

Addiction: No addiction

Bowel Habit: Irregular

Physical activity: Moderate active

General examination-

General condition- Good

Built: Obese

Nutritional status: Adequate

Height: 5'2"

Weight: 76kg.

B.P.= 126/74mm of Hg

Pulse rate: 80/min.

Respiratory rate: 16/min.

2.2 Treatment

By the history and clinical investigations, Diabetes Mellitus type 2 was strongly suspected and was started on treatment for diabetes in the form of coarse powder along with diet management and regular exercise or yoga. According to Sharangadhar [8], we prescribe Vidangadi Kwatha 40-50ml, two times a day before meal (30minutes). During the case study, the patient was called once a week for first follow up & compliance, then once in a month. Nutrition and physical activity are also important parts of a healthy life style in a diabetic patient to keep blood glucose level in normal range.

2.3 Diet management

- All refined sugars such as glucose, sucrose, and their products (soft drinks, sweets, toffees, etc.) and honey should be avoided, except during severe illness or episodes of hypoglycaemia. These foods contain simple sugar, which is easily absorbed causing rapid rise in blood sugars.
- Animal fat such as butter, lard, egg yolk, and other foods high in saturated fatty acids and cholesterol should be replaced with vegetable oils like mustard oil and ingudi oil [9].
- Salt should be reduced whether hypertensive or not.
- Alcohol and cigarette smoking should be avoided by diabetic patients.
- Small meals spaced over the day, rather than 1 or 2 big meals, are helpful in avoiding post-pyramidal peaks in blood sugar.

- The items allowed for free consumption include: water, green leafy vegetables, tomatoes, onions. Cucumber, peppers, vegetable salad without cream.
- Small meals with salad spaced over the day, rather than 1 or 2 big meals, are helpful in avoiding post-pyramidal peaks in blood sugar.

2.4 Physical exercise

- Regular 30 minutes physical activity helps the body cells take up glucose and thus lower blood glucose levels.
- Walking is one of the easiest and healthiest ways to exercise.

2.5 Yoga

- Patient was taught pranayama & yoga asana by a yoga expert. Total time for performing yoga was 30-35 minutes every day.
- Bhastrika pranayama- 3-5minutes per day
- Kapal bhati- 5-10minutes per day
- Anulom-viloma- 5 minutes per day
- Udget-om uccharana- 2 minutes per day
- Paschimottanasana- 3-5 minutes per day
- Bhujangasana- 5minutes per day
- Shavasana- 2 minutes per day

3. Result

After three months of follow up on the 4th visit, the patient continued to achieve the glycemic goals with Fasting plasma glucose 116.0 mg/dl, Post prandial glucose 127.0 mg/dl and HbA1c 6.7%.

Biochemical parameters	Before treatment	1 st follow-up	2 nd follow-up	3 rd follow up
Fasting blood glucose	188.0 mg/dl	144.0 mg/dl	138.0 mg/dl	120.0 mg/dl
Post prandial blood glucose	216.3 mg/dl	206.0 mg/dl	190.0 mg/dl	132 mg/dl
HbA _{1c}	7.6 %	-	-	6.9%

Table 1: At the time of follow ups-

4. Discussion

Vidangadi Kwatha is classical formulation indicated in Madhumeha (Diabetes Mellitus Type 2). The dose of Kwatha is 2 pala (i.e 96 gms). For making Kwatha, make yavkut (coarse powder) of ingredients (equal amount of each ingredient) of Kwatha and mixed water 4 times of coarse powder, then boil till the water remains of 1/4th of total [8]. Now separate the remain liquid decoction with cotton cloth and take 40-50 ml of Kwatha twice time daily before meal (30minutes). The role of HbA_{1c} as a screening tool for the diagnosis of diabetes has been proposed for quite some time. There was a significant reduction in HbA_{1c} of 0.7%, FBG of 68 mg/dl, and PPBG of 84.3 mg/dl, in an average duration of 90 days. The dose of Kwatha were reviewed & adjusted at monthly study visits. There was an important role of diet and lifestyle in the management of diabetes. The breakfast should be 1/3rd fruit, 1/3rd starchy fiber foods, and 1/3rd protein. The lunch and dinner plates should be ½ vegetables, 1/4th starchy fiber foods, and 1/4th protein.

Patient was taught pranayama & yoga asana also. Various yoga-asanas may be directly rejuvenating cells of pancreas as a result of this there may be increase in utilization and metabolism of glucose in the peripheral tissues, liver, and adipose tissue through enzymatic process [10]. Yoga asanas with its change in posture and controlled breathing in

pranayama influences mental status of an individual, stress and brings about feeling of well-being & hormonal balance. Sense of well-being seen in those practicing yoga is also believed to be due to endogenous secretion of metabolism [11]. The postulated mechanism of action of yoga is through parasympathetic activation and the associated anti stress mechanism. It reduces perceived stress and HPA axis activation thereby improving overall metabolic and psychological profiles, increasing insulin sensitivity, and improving glucose tolerance and lipid metabolism [12].

5. Conclusion

Ayurvedic drugs (medicinal plants) are believed to be the world's best chemist and are non-toxic and many plants are the major sources of natural products which are of pharmaceutical importance and many more single as well as compound herbal formulations have been reported in Ayurvedic classics for the treatment of Madhumeha (Diabetes Mellitus Type II). Due to the side effects, adverse reactions and many more associated complications of synthetic drugs, these have been a swift towards natural resources showing anti-diabetic activity. In comparative to synthetic drugs, herbal drugs are effective, less side effects, broad range of action and relatively low cost makes polyherbal drug a good choice. Diet and effective lifestyle modifications are the cornerstone in the management of type 2 diabetes.

Acknowledgement

A very thankful Banaras Hindu University for providing the facilities for conducting this clinical trial.

Conflict of Interest

No conflict of interest between the authors.

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