

Clinical Evaluation of Laghu Shankha Prakshalana in The Management of Madhumeha (Diabetes Mellitus-II): A Case Report

Sonika^{1*}, Kapil², Dr. Kanchan Chowdhury³, Dr. Vijay Kumar Srivastava⁴

¹Ph. D Scholar, Department of Panchakarma

²Ph. D Scholar, Department of Kayachikitsa

³Assistant Professor, Department of Swasthavritta & Yoga

⁴Assistant Professor, Department of Panchakarma, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India.

***Corresponding Author - Sonika**

***Ph. D Scholar**, Department of Panchakarma, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University. Email: phdsonikaushik720@gmail.com

KEYWORDS

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ABSTRACT

Diabetes is a chronic noncommunicable disease for which there is not yet a cure. Diabetes mellitus-II (DM) is a group of metabolic disorders characterized by chronic hyperglycemia due to relative insulin deficiency, resistance, or both, resulting in abnormally high blood glucose levels and many complications. Madhumeha described in Ayurveda texts is often compared with Diabetes mellitus-II. Yoga, an ancient practice, is now emerging as a complementary therapy for noncommunicable diseases such as hypertension, diabetes, etc. In the present case study, a 54-year-old female patient with a known case of Madhumeha (Diabetes Mellitus-II) for the past one year presented with complaints of increased frequency of urination, stress, burning sensation in hands and feet, excessive sweating, hunger, thirst, and fatigue. A properly designed three-month Yoga Practice was provided to her by Yoga trainer. After three months, fasting blood sugar dropped from 136 to 95 mg/dL and postprandial blood sugar dropped from 221 to 110 mg/dL, and Weight is reduced from 80 to 70 kg. The subjective symptoms also decreased remarkably. The results concluded that consistent long-term practice of Yogic Practices can not only maintain the blood sugar levels of patients with diabetes but also improve the quality of life

1. Introduction:

Diabetes Mellitus II is the most common of all diabetes accounting for over 90% of all diabetes worldwide. According to the Indian Diabetes Federation, 537 million people were living with diabetes as of 2021. This is expected to increase to 643 million by 2030 and 783 million by 2045. ^[1] The main cause of T2DM is the dysfunction of the regular functioning of pancreatic (β -cells) and insulin resistance, leading to hyperglycemia in the blood. ^[2] It is a prevalent disease in the present area. Although various treatment methodologies have been adopted for the management of this disease, its holistic management is still a challenge. Yoga, being a part of ancient Indian culture, is developing as an alternative therapy system nowadays. However, the tradition focuses on internal cleansing also described as Shatkarma kriya. ^[3] The classical ancient texts Hatha Yoga Pradipika and Gheranda Samhita describe purification practices known as Shatkarmas. Among the several types of kriyas Varisaradhauti (Shankha Prakshalana) the one from Antahdhauti mentioned in Gherand Samhita. ^[4] Laghu Shankha Prakshalana is a short version of Shankha Prakshalana. which is intended for intestinal cleansing and helps to increase the production of insulin and to control blood glucose levels. ^[5] Regular Yogic practices calm the mind and improve overall health. Yoga may help people with various chronic diseases and alleviate their quality of life as in people with diabetes mellitus II. ^[6]

2. Patient information:

On 16/10/2024, a 54-year-old, married, female patient reported to the outpatient Department of Panchakarma, Sir Sunderlal Hospital, Varanasi, India. She complained of severe weakness, polydipsia, polyphagia, Polyurea, and joint pain over the last 5-7 months. The patient is a resident of Varanasi (Uttar Pradesh). She was screened for fasting blood sugar at Sir Sunderlal Hospital, BHU, Varanasi the treatment risk of polydipsia, Weight loss weakness, and joint pain based on symptoms after her screening based on symptoms, it was diagnosed that she was at high risk for diabetes mellitus-II with a fasting blood sugar 136 mg/dl as shown in **Table-2**. After taking the written informed consent, the measurements for FBG and PPBG, HbA1c were taken at baseline and after

three months. The result of the HbA1c test at baseline is 6.5, which falls into the category of diabetes mellitus-II according to American Diabetes Association guidelines.

2.1 Timeline: In the present case, Laghu Shankha Prakshalana once and Yogic intervention was continued for 3 months, from 16/10/2024 to 16/01/2025. **Table 1** shows the timeline of follow-up, history and clinical outcomes.

Table 1: Timeline of Disease Activity and Intervention

Timeline	Clinical Intervention
October 2024	After history taking and blood investigation, the patient was advised Laghu Shankha Prakshalana once and Yogic intervention for 3 months. [Table 4-5]
November 2024	The patient advised continued Yogic intervention. An improvement in symptoms of diabetes mellitus-II was observed.
December 2024	After two months of follow-up, the patient was advised to continue the Yogic intervention.
January 2025	All reports were found to be in the normal range. It was decided to continue the same Yogic intervention. If diabetic Mellitus-II symptoms persisted again.

2.2 Clinical Findings:

The patient was subjected to fasting blood sugar (FBS) 136 mg/dl and postprandial blood sugar (PPBS) 221 mg/dl on 16/10/2024. Glycosylated percentage (HbA1C) tested on 16/10/2024 showed 6.5 %. The subjective symptoms showed an increase in **Table 3**. Thus, the patient was diagnosed with Diabetes mellitus-II by the Ayurvedic physician at Panchakarma OPD, Sir Sunderlal Hospital, Banaras Hindu University, Varanasi, India.

Table: 2 Biochemical characteristics of participants after three months of Laghu Shankha Prakshalana and Yogic intervention:

Variable	Before Intervention	After Intervention
FBG	136 mg/dl	95mg/dl
PPBG	221 mg/dl	110 mg/dl
HbA1c	6.5 %	5.3 %

Table: -3 Significant improvements were observed in the subjective as well as objective parameters of the patient:

Sr. N0	Variables	Before Intervention	1 st Fellow-up	2 nd Fellow-up	3 rd Fellow-up
1.	Polydipsia	+	-	-	-
2.	Polyurea	-	-	-	-
3.	Polyphagia	++	+	+	-
4.	Burning sensation	+	+	+	-
5.	Weakness	++	+	-	-
6.	Joint Pain	+	-	-	-

(Nil -, Mild +, Moderate ++, Severe +++)

3. Therapeutic Interventions:

Laghu Shankha Prakshalana once and Yogic intervention was continued for Under the previous consultation patient was advised intervention treatment as mentioned (**Tables 4-5**). The Diabetes mellitus-II Laghu Shankha Prakshalana once and Yogic intervention session was conducted for a total period of 3 months with one session per day in the morning for 6 days a week and each session were conducted for 30 minutes.

Table-4 Intervention Schedule Laghu Shankha Prakshalana (LSP)Therapy:

Procedures	Start Laghu Shankh Prakshalana procedures duration 6-7 am. Take two litters of Luke warm water and mix 4 teaspoons of salt. Drink two glasses of saline water quickly and perform the following five Asanas eight times each. These asanas are: 1. Tadasana 2. Triyak Tadasana 3. Kati Chakrasana 4. Triyak Bhujangasana 5. Udarakarsana Drink two more glasses of water and repeat the asanas eight times each. Finally, repeat the process for a third time, then go to the toilet, but do not strain. If the bowels are not evacuated immediately, they will be evacuated later.
Post Procedures	Kunjal kriya and neti can be practiced immediately after Laghu Sakha Prakshalana. Food can be taken after half an hour of the practice. This was practiced once a week. [7]
Diet	30-40 minutes after completing the L.S.P the specially prepared food Khichadi (Rice +Moong dal +Salt+ Ghee) was taken.

Table-5 Yoga Therapy Intervention:

Sr. no	Yoga Practices	Duration
1.	Sukshama- Vyayama <ul style="list-style-type: none"> Griva-Shakti Vikasaka Skandh-Shakti Vikasaka Kati-Shakti Vikasaka Gulphha-Pada- Shakti-Vikasaka 	6 minutes
2.	Asana <ul style="list-style-type: none"> Mandukasana Ardhamatsyendrasana Bhujangasana Savasana 	16 minutes
3.	Pranayama <ul style="list-style-type: none"> Bhramari-Pranayama 	6 minutes
4.	<ul style="list-style-type: none"> Closing Time (Om Chanting) 	2 minutes
	Total-time	30 minutes

3.1 Follow-up and outcomes:

The first follow-up of FBS, PPBS, Blood Pressure, and BMI were done after one month and HbA1c, Renal function test (RFT), and Liver function test (LFT) follow before and after intervention. The patient was stable without any new complaints. Her complaints like polydipsia, polyphagia, burning sensation in hands and feet, weakness, weight loss of the body, and joint pain were reduced. After one month her FBG and PPBG were 121 mg/dl and 193 mg/dl respectively, showing a satisfactory reduction in blood sugar levels. She was advised to take a complete blood count (CBC), liver function test (LFT), renal function test (RFT), serum electrolytes, and lipid profile tests for a basic medical assessment before and at the end of the trial. She was also advised to continue the Yogic Intervention for another two months.

Table: 6 Significant improvements were observed in the subjective as well as objective parameters of the patient:

Sr. N0	Variables	Before Intervention	After Intervention 1 st	After Intervention 2 nd	After Intervention 3 rd
1.	FBG	136 mg/dl	121 mg/dl	102 mg/dl	95 mg/dl
2.	PPBG	221 mg/dl	193 mg/dl	131mg/dl	110 mg/dl
3.	BMI	29.4 kg/m ²	27.9 kg/m ²	27.2 kg/m ²	25.7 kg/m ²
4.	BP	138/98 mmhg	130/90 mmhg	128/84 mmhg	124/82 mmhg
5.	HbA1c	6.5%	-	-	5.3%
6.	Cholesterol	193 mg/dl	-	-	160 mg/dl
7.	Triglycerides	250 mg/dl	-	-	200 mg/dl
8.	Total-Bilirubin	0.80 mg/dl	-	-	0.45 mg/dl
9.	SGOT	62 u/l	-	-	52 u/l
10.	SGPT	127 u/l	-	-	108 u/l

3.2 Patient's Perspective on Laghu Shankh Prakshalana treatment received:

When I decided to take the Yoga therapy and Laghu Shankh Prakshalana intervention, I was worried about getting relief from my problems. I found Yogic therapy to be very helpful. Both Yoga therapy and Laghu Shankh Prakshalana had positive effects on my health. All of my blood sugar reports (FBG, PPBG and HbA1c) are now in normal range. Thanks to Yoga Therapy and Panchakarma staff for helping the patient to become healthy.

3.3 Limitation of case report:

While this outcome was observed in a single patient, further research on a larger sample size would be necessary to establish evidence for the significant effectiveness of such Panchakarma procedures and Yoga therapy in relieving symptoms of Diabetes mellitus-II.

4. Discussion

In accordance with the findings of this research, the quality of life of Madhumeha (Diabetes Mellitus-II) patients has improved and their blood glucose levels are effectively controlled. **Rajesh R et al. (2021)** found that Yoga therapy has a positive effect on FPG, PPG, and HbA1c along with many anthropometry measures studied in this study. Yoga was found to be effective for controlling glycaemic parameters in Madhumeha (diabetes mellitus-II).^[8] Multiple studies suggest the role of Yogic practices in the amelioration of Madhumeha (diabetes mellitus-II) in an effective way. Laghu Shankha Prakshalana and Yogic practices significantly reduced Madhumeha (diabetes mellitus-II) symptoms and normalized poorly controlled glycaemic parameters.^[9] Yoga may lessen stress and psychological anxiety, which would lower cortisol levels. It was believed that this cortisol drop would enhance insulin sensitivity and responsiveness, possibly resulting in a decrease in blood glucose levels.^[10] Yoga practices were incorporated into the patient's routine advised Laghu Shankha Prakshalana and asanas to rejuvenate pancreatic cells through alternating abdominal contraction and relaxation.^[11] The strength of the study shows that there were no adverse effects reported by the subjects and it is feasible and safe and the patient was comfortable, felt better with the treatment. The limitations may be on the results as they may vary because this is a single case study. Hence, further well-planned clinical studies with larger sample sizes are suggested to validate the results.

Conclusion:

In this particular case, study cited it can be concluded that Yogic Practices not only control fasting blood glucose, postprandial glucose level, and HbA1c but also improve the Stress of patients with Madhumeha (Diabetes Mellitus-II). Yogic Practices by their properties help normalize blood sugar levels. Laghu Shankha Prakshalana is a promising treatment seen in the prevention of Madhumeha (Diabetes Mellitus II). The patient's elevated blood sugar level is normal and the hyperlipidemia becomes normal. The subjective criteria of diabetes

mellitus-II are relieved by this procedure. Further studies conducted on more patients are necessary for more illumination on the Madhumeha (Diabetes Mellitus-II).

Informed consent: Informed consent was obtained from the patient before the start of the Laghu Shankha Prakshalana. Written consent for the publication of the patient's clinical details was obtained before initiation of the Yoga therapy.

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