



Case Study

## EFFICACY OF ABHRAKADI YOGAM IN MANAGING TYPE II DIABETES MELLITUS

Krishna G S<sup>1\*</sup>, L Mahadevan<sup>2</sup>, Kasthuri Nair A<sup>3</sup>, Arun Pratap<sup>4</sup>

\*1PG Scholar, <sup>2</sup>Professor, <sup>3</sup>Assistant Professor, <sup>4</sup>Professor & HOD, Department of Kayachikitsa, Pankajakasthuri Ayurveda Medical College & PG Centre, Kattakada, Thiruvananthapuram, Kerala, India.

### Article info

#### Article History:

Received: 18-11-2023

Accepted: 11-12-2023

Published: 05-01-2024

### KEYWORDS:

Type 2 Diabetes Mellitus, *Abhrakadi Yogam*, *Avaranajanya Madhumeha*.

### ABSTRACT

Diabetes mellitus is a metabolic disorder mainly characterized by elevated blood sugar level or hyperglycemia. Type 2 Diabetes Mellitus (T2DM) is the most common form, accounting for about 90% of the total diabetic population and is a major cause of morbidity and mortality. The condition mainly occurs from insulin resistance and relative deficiency in insulin secretion. The condition hampers the patient's quality of life with symptoms of polyuria, polyphagia, polydipsia, fatigue, weight loss, etc. Type 2 Diabetes Mellitus can be managed effectively in the initial phases with proper medication and lifestyle modification. The untimely treatment, chronicity of insulin resistance, and hyperglycemia can cause damage to multiple organs. In Ayurveda, the descriptions of *Avaranajanya Madhumeha*, which is a *Medovahasrothodushti Vikara* can be compared with T2DM as both seem analogous in etiopathogenesis and clinical features.

The present study aims to evaluate the efficacy of *Abhrakadi Yogam* in managing Type II Diabetes Mellitus. The study was a consecutive case series done on an OPD basis. The study was conducted on ten subjects newly diagnosed with Type 2 Diabetes Mellitus, in whom *Abhrakadi Yogam*, 4gm thrice daily before food along with honey as *Anupana* was given for 90 days and 30 days follow up. Assessment was done on 0<sup>th</sup>, 91<sup>st</sup> and 121<sup>st</sup> day with subjective and objective parameters. All drugs possess *Tridoshahara* property which helps in controlling all the *Doshas*. The *Deepana*, *Pachana*, *Lekhana*, *Vatanulomana* and *Rasayana* properties of the trial drug helped in *Amapachana*, *Kleda Shoshana*, *Medohara* and *Srothoshodhana*, restoring *Dhatu Sthirata* thereby improving quality of life of patients. After treatment significant improvement was observed in assessment parameters. The study showed significant clinical efficacy and safety of the trial drug.

### INTRODUCTION

Currently, non-communicable or chronic diseases are on the rise worldwide, and Diabetes Mellitus (DM) is one among the most prevalent lifestyle disorders, leading to an increase in morbidity and mortality. Diabetes mellitus is a heterogeneous metabolic disorder characterized by elevated levels of blood glucose or hyperglycemia<sup>[1]</sup>. It occurs either due to insulin deficiency, impairments in insulin action (insulin resistance), or both.

Type 2 diabetes mellitus (T2DM) results from insulin resistance and relative insulin deficiency. The patient presents with polyuria, polydipsia, fatigue, tingling sensation, burning neuropathy<sup>[8]</sup>, etc. Type 2 Diabetes Mellitus accounts for about 90% of total diagnosed diabetes cases<sup>[2]</sup>. It is associated with complex interactions of genetic, environmental, and sedentary lifestyles, a major risk for developing and progressing the condition. In India, about 77 million individuals aged 18 and above suffer from type 2 diabetes, with nearly 25 million being pre-diabetic<sup>[5]</sup>.

In Ayurveda, the descriptions of *Avaranajanya Madhumeha* share similarities with that of T2DM in etiopathogenesis and clinical features. *Acharyas* explained it as *Medovahasrothodushti Vikara* with *Kaphapradhana Tridoshakopa*<sup>[3]</sup>. It is a condition with *Agnidushti*, *Bahudrava Shleshma*, *Kleda Vridhi*,

### Access this article online

Quick Response Code



<https://doi.org/10.47070/ayushdharma.v10i6.1449>

Published by Mahadev Publications (Regd.)  
publication licensed under a Creative Commons  
Attribution-NonCommercial-ShareAlike 4.0  
International (CC BY-NC-SA 4.0)

*Bahvabhadra Medas* as major pathological features. Thus, drugs possessing *Deepana, Pachana, Tridoshaghna*, mainly *Kapha Pitta Samana, Vatanulomana, Rasayana* and *Pramehaghna* are to be selected for the management of T2DM.

In T2DM management, anti-diabetic medications and Insulin therapy<sup>[6]</sup> are increasingly prescribed early on, which are effective in maintaining blood sugar levels. However, long-term use may result in hypoglycemia, swelling of arms and legs, tachycardia, anxiety, skin rashes, etc. This emphasizes the necessity of effective management without compromising the patient's quality of life and highlights the need to reassess the effectiveness of Ayurvedic formulations in managing Type 2 diabetes mellitus. Numerous clinical studies have already validated the efficacy of various Ayurvedic formulations for treating *Madhumeha*. *Abhrakadi Yogam* mentioned in *Yogaratanakara*<sup>4</sup>, *Prameha Chikitsa* is potentially one such formulation possessing *Deepana, Pachana, Tridoshaghna, Srothoshodhaka, Medohara, Kledashoshana, Vatanulomana, Rasayana*, and *Pramehaghna* properties. Most of the ingredients in this formulation exhibit antidiabetic, antioxidant, antihyperglycemic, anti-inflammatory, and immunomodulatory attributes. These properties collectively can contribute to lowering and controlling blood glucose levels, enhancing insulin sensitivity,

optimizing beta cell function, preventing diabetes progression, and complications.

## MATERIALS AND METHODS

### Diagnostic criteria for Diabetes<sup>[7]</sup>

The current diagnostic criteria considered by ADA and WHO in 2010 have been followed in the present study. According to these criteria, only the venous plasma glucose values should be used for definitive diagnosis, as all the evidence supporting the diagnostic thresholds is based on venous plasma glucose. The diagnostic criteria are as follows:

- Fasting plasma glucose level of  $\geq 126$ mg/dL (7mmol/L)
- Two-hour post glucose load plasma glucose of  $\geq 200$ mg/dL (11.1mmol/L)
- A cut-off HbA1c of 6.5% (48mmol/mol) or more.

### Clinical Report

The present case series included 10 subjects, newly diagnosed with Type 2 Diabetes mellitus with clinical features of T2DM who are registered for clinical study in the OPD of Pankajakasthuri Ayurveda Medical College and PG Centre Hospital, satisfying the inclusion criteria. After proper evaluation and clinical examination, trial drug was given to subjects, and results were analysed based on subjective and objective parameters.

**Table 1: Clinical report of subjects**

Case	Diagnosis	Age	Gender	Patient history	Complaints with duration	After treatment
Case 1	Newly diagnosed Type 2 DM	51	Female	Family history- Nil Menopause- 42 yrs. Day sleep, high carb diet, oily food	Increased frequency of micturition - 2yrs	Absent
					Increased thirst - 2 yrs.	Reduced
					Gradually excessive hunger	Reduced
					Dryness of mouth	Absent
					Fatigue-2 months	Reduced
					Burning sensation of palm and soles-2 months	Absent
					Glycosuria in urine analysis	Negative
Case 2		65	Male	Day sleep, sleep reduced and disturbed, high carb diet	Increased micturition-5 yrs.	Absent
					Increased thirst and water intake - gradually	Reduced
					Excessive hunger- 6months	Absent
					burning sensation of palm and soles-6 months	Reduced
Case 3		47	Female	No family h/o DM, day sleep, sedentary lifestyle	Fatigue-5 months	Reduced
					burning sensation of palm and soles-5 months	Reduced
					Increased thirst-4 yrs.	Absent

				Increased appetite yrs.	Absent
<b>Case 4</b>	49	Female	Mother had DM Hysterectomy done - 9 yrs back, sedentary	Increased fatigue - 3 months	Reduced
				Excessive thirst, frequent water intake- 3 months	Absent
				Burning sensation of palm and soles-3 months	Reduced
<b>Case 5</b>	65	Male		Increased frequency of micturition since 5 yrs, increased since 2 months	Absent
				Gradually tiredness, increased fatigue-2 months	Absent
				Increased thirst	Reduced
				Burning sensation of both soles and gradually to both palms.	Reduced
				Glycosuria in urine analysis	Negative
<b>Case 6</b>	50	Male	No family h/o DM Sedentary lifestyle	Increased fatigue-1.5 yrs	
				Increased appetite-1.5 yrs	Absent
				Burning and pricking sensation of both palm and soles-1.5 years	Reduced
				Numbness of foot-1.5 yrs	Reduced
				Gradually- Increased thirst	Reduced
				Feeling of tiredness	Fatigue
				Glycosuria in urine analysis	Negative
<b>Case 7</b>	43	Female	No family h/o DM, h/o Gestational DM-14 yrs back, Sedentary lifestyle BMI-30kg/m <sup>2</sup> ,h/o DLP (under med)-1 yr.	Excessive thirst for past 3 yrs, increased -5 months	Reduced
				Fatigue for past 3 yrs, increased - 6 months	Reduced
<b>Case 8</b>	64	Male	Mother had DM, h/o DLP & HTN (under med)-5 yrs sleep disturbed and reduced, sedentary lifestyle, day sleep	Increased thirst, excessive intake of water -3 yrs	Absent
				Gradually -increased fatigue-5 months	Reduced
				Burning and pricking sensation of both palm and soles-5 months	Reduced
<b>Case 9</b>	40	Female	Mother and father had DM, Irregular bowel habits, constipation, irregular menstrual cycle, sleep reduced and disturbed, day sleep	Increased frequency of micturition- 3 yrs	Reduced
				Developed increased thirst and water intake	Reduced
				Also, dryness of mouth	Absent
				Gradually-increased appetite	Reduced
				Burning sensation of b/l	Reduced

					toes and fingers, later to both palm and soles	
					Developed fatigue	Reduced
					Frequent micturition and fatigue-5 months.	Reduced
<b>Case 10</b>		48	Male	No family h/o DM, obese, sedentary lifestyle, ex-smoker	Initially had frequent micturition, increased since 6 months	Reduced
					Developed increased thirst and excessive intake of water-4 years.	Absent
					Dryness of mouth	Absent
					Gradually-burning sensation of palm and soles	Absent
					Increased fatigue	Absent

### Therapeutic Intervention, Follow-up, and Outcome

The selected subjects were given *Abhrakadi Yogam* 4 grams thrice daily before food, along with 4ml of honey as *Anupana* for a period of 90 days. Subjects were encouraged to review once in 15 days. Follow-up was done 30 days after the completion of the medicine. Assessment of subjects was done on the 0<sup>th</sup>, 91<sup>st</sup>, and 121<sup>st</sup> day with subjective and objective parameters.

### Subjective Parameters

Polyuria, polydipsia, polyphagia, fatigue, dryness of mouth, and burning sensation of palm and soles.

### Objective Parameters

FBS, PPBS, HbA1C, SGOT, SGPT, Creatinine and Ketone

**Table 2: Grading of Subjective parameters**

Assessment parameter	Grade 0	Grade 1	Grade 2	Grade 3
Polyuria	5-6 times in 24 hours	8-9 times in 24 hours	10-11 times in 24 hours	>13 times in 24 hours
Polydipsia	<6 glasses	7-8 glasses	9-10 glasses	>12 glasses
Polyphagia	2 meals	3 meals	4 meals	>4 meals
Fatigue over past week	No fatigue feeling throughout the week	Fatigue feeling on 1-2 days during the week	Fatigue feeling on 3-5 days during the week	Fatigue feeling throughout the week
Dryness of mouth	Absent	Mild	Moderate	Severe
Burning sensation of palm & soles	Absent	Not continuous and occasionally present	Moderate and constantly present	Severe

### OBSERVATION AND RESULTS

Marked improvement was observed in the clinical features of T2DM and laboratory investigations after treatment. The results were analyzed using subjective and objective parameters on the 0<sup>th</sup> day (before treatment), 91<sup>st</sup> day (after treatment), and 121<sup>st</sup> day (after follow-up).

**Table 3: Grading of the effect of *Abhrakadi Yogam* in subjective parameters**

	Case 1			Case 2			Case 3			Case 4			Case 5		
	BT	AT	AF	BT	AT	AF	BT	AT	AF	BT	AT	AF	BT	AT	AF
Polyuria	2	0	0	1	0	0	0	0	0	0	0	0	2	0	0
Polyphagia	3	1	1	1	0	0	1	0	0	0	0	0	1	0	0
Polydipsia	1	0	0	3	1	1	1	0	0	1	0	0	1	0	0
Fatigue	2	1	1	1	1	1	2	1	1	3	1	1	2	1	1
Dryness of mouth	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Burning sensation of palm & soles	2	0	0	2	1	1	2	1	1	2	1	1	1	0	1
	Case 6			Case 7			Case 8			Case 9			Case 10		
	BT	AT	AF	BT	AT	AF	BT	AT	AF	BT	AT	AF	BT	AT	AF
Polyuria	0	0	0	0	0	0	0	0	0	3	1	1	2	1	1
Polyphagia	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0
Polydipsia	2	1	1	3	1	1	1	0	0	3	1	1	2	0	0
Fatigue	2	1	0	3	3	2	3	1	1	2	1	1	1	0	0
Dryness of mouth	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0
Burning sensation of palm & soles	2	1	1	0	0	0	3	1	1	3	1	1	1	0	0

**Table No.4 Effect of *Abhrakadi Yogam* in objective parameters**

Assessment	FBS (in mg/dl)	PPBS (in mg/dl)	HbA1C (in %)	SGOT (in IU/L)	SGPT (IU/L)	Creatinine	Ketone
<b>Case 1</b>							
BT	164	270	10.1	28	24	0.78	Nil
AT	154	257	7.4	23	18	0.77	Nil
AF	192	278	11.3	23	17	0.78	Nil
<b>Case 2</b>							
BT	166	191	10.4	25	17	1.17	Nil
AT	144	165	7.6	23	17	1.16	Nil
AF	161	186	7.7	22	17	1.16	Nil
<b>Case 3</b>							
BT	168	239	8.6	10	9	0.7	Nil
AT	125.8	186	7.8	11.3	8.5	1.12	Nil
AF	137.2	180	7.5	12.6	10.7	1.08	Nil
<b>Case 4</b>							
BT	158	203	12.1	23	25	0.77	Nil
AT	129	174	7.9	18	20	0.85	Nil

AF	155	242	8.3	20	22	0.85	Nil
<b>Case 5</b>							
BT	150	215	9.4	23	20	1.13	Nil
AT	125	185	7.5	18	20	1.1	Nil
AF	132	195	7.5	20	22	0.9	Nil
<b>Case 6</b>							
BT	148	265	12.7	20	16	1.38	Nil
AT	148	223	9.8	21	17	1.38	Nil
AF	162	270	10.2	20	17	0.36	Nil
<b>Case 7</b>							
BT	127	226	7.4	22	19	0.7	Nil
AT	121	152	5.9	22	18	0.74	Nil
AF	121	152	5.9	22	18	0.74	Nil
<b>Case 8</b>							
BT	174	268	9.4	48	55	0.87	Nil
AT	154	235	7.6	42	48	0.85	Nil
AF	180	250	7.7	40	48	0.85	Nil
<b>Case 9</b>							
BT	174	266	13.3	25	33	0.6	Nil
AT	128	223	12.8	27	31	0.8	Nil
AF	122	217	12.7	23	30	0.8	Nil
<b>Case 10</b>							
BT	165	265	9.8	16	11	0.95	Nil
AT	143	242	8.3	18	11	0.94	Nil
AF	156	266	8.3	16	12	1.0	Nil

## RESULT

- Marked improvement was observed in the subjective parameters such as polyuria, polyphagia, polydipsia, fatigue, burning sensation of palm and soles and dryness of mouth after treatment. Burning sensation of palm and soles result shows an overall slight elevation after follow-up on comparing with after treatment results.
- Marked improvement was observed in the objective parameters such as FBS, PPBS and HbA1C after treatment.
- Improvement in HbA1C was maintained after follow up
- FBS and PPBS were slightly elevated after follow up on comparing with after treatment results.

## DISCUSSION

*Avaranajanya Madhumeha* mainly arises from *Santharpanotha Nidana* causing an *Avarana* type of pathology. On analysing the symptoms of different types of *Prameha*, it is observed that most of the

symptoms which can be compared with Type 2 Diabetes Mellitus can be identified in the stage of *Avaranajanya Madhumeha*. The *Pratyatmalinga* of *Madhumeha* i.e., *Prabhuta Mutrata* has been observed in these subjects. The various *Aharaja Nidana* explained in the classics possess net properties like *Guru*, *Snigda*, *Sheeta*, *Pichila Guna* and *Madhura Amla Lavana Rasa* predominant diets, that could vitiate the *Jataragni*, *Dhatwagni* and *Bhutagni* leading to formation of *Ama* and accumulation of *Mala* indicating the metabolic derangements at the cellular level. *Vihara Nidana* indicates sedentary habits. All these factors tend to vitiate *Kapha Dosha* initially and further vitiate all three *Doshas* in the *Vyaktha Avastha*. Excessive intake of *Madhura Rasa* leads to conditions like *Sthoulya* and *Prameha*. *Madhura Rasa* is predominant of *Jala* and *Pritvi Mahabhoota*. Thus, its excessive indulgence increases the *Kapha Dosha* quantitatively by *Jalamahabhoota* and qualitatively due to loss of *Sthira Guna*.

In *Avaranajanya Madhumeha*, some of the *Poorvarupa* are retained in *Vyakta Avastha* such as *Karapada Daha*, *Mukha Sosha*, *Pipasa*, *Alasya* in these subjects. The initial phases of T2DM can be correlated to *Avaranajanya Madhumeha* due to the obstruction of *Vata Dosha* by the *Avaraka Kapha* and *Pitta*. Due to over indulgence of *Guru*, *Snigdha*, *Amla*, *Lavana Rasayukta Ahara*, *Asyasugha* and avoidance of *Vyayama* leads to excessive increase of *Kapha*, *Pitta*, *Meda* and *Mamsa*, in turn the normal pathway of *Vata* gets obstructed i.e.; *Chala Guna* is hampered due to *Avarana* by vitiated *Dosha* and *Dushya*. In the initial phases, *Kapha Dosha* being the first *Dosha* affected, loses its *Sthiratva* i.e., the *Drava Guna* is increased due to *Dhatvagnimandya* and *Pitta Vridhi*. *Bahudrava Sleshma* then vitiates its *Ashraya Dhatu Medas* along with the *Kleda* to *Bahuabadha Medas* and vitiates all other *Dushya*. All the *Kledayukta Dushya* enters the *Mutravaha Srotas*, vitiates it, and gets lodged in *Basti*, which is a *Apana Vata Sthana* and gets further afflicted by *Viguna Apana Vata* and is excreted. As it is a *Medopradoshaja Roga*, the subjects show the features of *Medo Dushti Lakshanas*. Due to the vitiation of *Kleda*, patients void *Prabhoota Mutra*, further causing *Trishna*, and *Asyashosha*. *Vata* subsequently gets vitiated when there is a presence of *Avarana*. *Kapha Medo Avruta Vata Lakshanas* like *Sthaimitya*, *Angamarda* are seen in the subjects. On the progression of disease from *Paithika* to *Vatika* stage symptoms of *Pitta* and *Vata* are observed i.e., *Daha* along with *Shoola* are also seen in *Pittavruta Vata*. When *Vata* dislodges the *Avaraka Pitta*, *Rakta*, and *Kapha* to extremities, neuropathic features like burning sensation, numbness, etc are observed in the subjects. As *Vata* is being obstructed proper metabolism or *Dhatu Parinama* through *Rasadi Dhatuvaha Srotas* gets impaired due to *Dhatwagni Mandya*. The similar pathophysiology seen in *Athisthula* and hence the classification of *Sthoola Pramehi* can be better explained.

Type II Diabetes is a condition which cannot be cured completely. It can recur as the insulin resistance persists. Anti-inflammatory compounds secreted by the immune system protect beta cells from its attack. Administering insulin enables patients to live with the disease, but it does not restore pancreatic function. In *Avaranajanya Madhumeha*, the disturbed metabolic state suggest defect in the *Dhatvagni*. Thus, correction in this impaired *Agni* is necessary. As *Uttarottara Dhatu Poshana* is hampered, *Srothoshodhana* is necessary. As *Kleda Dushti* is a main factor in disease progression *Kleda Shoshana* is necessary to subside the symptoms. Thus, the drugs which are *Kapha Vata Shamaka*, *Tridoshaghna*, *Anulomaka*, having *Ruksha*,

*Ushna*, *Rasayana* properties are beneficial in the management of Type 2 Diabetes Mellitus.

#### Probable mode of action of *Abhrakadi Yogam*

The medicine used in the study is *Abhrakadi Yogam*, mentioned in *Yogaratanakara* in the context of *Prameha Chikitsa*. It contains 5 ingredients prepared as *Sukshma Churna* and adjuvant is honey. It has indication in all types of *Prameha*. The formulation is predominant of *Katu*, *Tikta*, *Kashaya Rasa*, *Laghu*, *Rooksha Guna*, *Ushna Veerya*, *Deepana*, *Pachana*, *Anulomana*, *Rasayana* properties. All the ingredients are *Tridoshahara* and is beneficial in *Avaranajanya Madhumeha* which is a *Kapha Pitta Pradhana Tridosha Vikara*.

*Katu* and *Tikta Rasa* has *Deepana* and *Pachana* properties which helps in increasing the *Pachakagni*, normalise *Samana Vayu Gati*, *Shamana* of *Kapha Dosha* and *Vatavardhaka* and consequently correcting *Dhatwagni* and thereby corrects metabolism. *Katu*, *Tikta* and *Kashaya Rasa* present in this formulation are antagonistic to *Madhura Rasa* thus it may help in reducing elevated glucose. The accumulated free fatty acids and hypertrophied adipose tissue can be understood as *Medhodhatu Vridhi* due to *Medodhatwagnimandya*. The *Laghu Guna* in this formulation with its *Lekhana* nature does *Srothoshodhana* by removing the accumulated *Bahuabadha Medas*.

The *Kashaya Rasa* and *Ruksha Guna* helps in *Kleda Shoshana*, so it may help in reducing polyuria by the *Sthambhana* nature. Thus, helps in restoring *Sthiratva* of *Kapha Dosha* and correcting *Kledayukta Dushyas*. The *Madhura Vipaka* helps in *Pitta Shamana*, *Dhatu Poshana*.

*Madhu* is mentioned as *Anupana*. *Madhu* is having *Lekhana* property of honey helps *Kleda Shoshana*, it has *Medo Kshayakara* action. It helps in enhancing the *Pramehaghna* property of *Abhrakadi Yogam* through its *Yogavahi* property.

*Hareetaki*, by its *Anulomana* property helps in correcting the *Viguna Apanavayu* and *Malapaka*. So, the constipation can be corrected. Also, with the *Brihmana* and *Balya* properties, muscle wasting and emaciation can be managed. It is proven to have antioxidant, hypoglycaemic, hypolipidemic and renoprotective activity which may have helped in reduction in blood glucose, maintaining normal creatinine level.

*Vibheetaki* having *Bhedana*, *Rechaka* properties may have helped in *Srothoshodhana* and thereby normalising vitiated *Apana Vayu*, expels the *Badha Mala* through *Guda Marga*. It is a proven potent drug with antidiabetic activity and also, has been proven to enhance insulin-stimulated glucose uptake in

adipocytes. Because of which maybe it has reduced blood glucose level.

*Amalaki* is a *Pramathi Dravya* which helps in *Dosha Sanchaya*, removes the *Srotho Sanga*, and thus helps in correcting *Dhatvagni* and *Dhatu Parinama*. The *Sheeta Virya* and *Dahaprasamana* property helps in *Pittashamana* and thus may have helped in reducing the burning sensation of palm and soles. It has been proven to have anti-diabetic, anti-cholesteremic, anti-lipidemic, and antioxidant activity which helps regulate insulin action by inhibiting glycogenolysis, reducing hepatic glucose production, and lowering blood glucose.

*Haridra* is having *Ushna Veerya*, *Katu Vipaka* which helps in *Medohara* and *Amapachana*. *Haridra* with its *Prabhava* is *Prameghna* and *Vikara Prasamana* has actions in *Raktavaha Srotas*. It has been proved to have antidiabetic, antioxidant, antihyperlipidemic activity which helps to reduce plasma glucose, increase plasma insulin levels, increase GLUT-2 transporters.

*Abhrakabhasma* or biotite ash is a mineral drug belonging to group of *Maharasa*. It has *Yogavahini* property which helps the *Prameghna* properties of other drugs. It is a proven antihyperglycemic, hepatoprotective and immune modulator effect which can act as *Rasayana*, it improves the *Dhatu Sarata* and *Nadi Balya*.

## CONCLUSION

The efficacy of *Abhrakadi Yogam* in managing Type 2 Diabetes Mellitus or *Avaranajanya Madhumeha* has been presented clinically. The trial drug in gross possesses *Sthambhana*, *Lekhana*, *Shoshana*, *Medohara* and *Rasayana* properties which is effective in reducing the *Sarira Kleda*, removing vitiated *Medas* and restoring the *Dhatu Shiratva*.

Utilizing these properties, subjects experienced significant improvement in subjective parameters and notable reductions in FBS, PPBS, and HbA1C levels after treatment. However, a slight elevation in FBS and PPBS values after follow up on comparing with after

treatment values indicates the clinical efficacy of *Abhrakadi Yogam* during the trial period. Furthermore, it effectively maintained SGOT, SGPT, creatinine, and ketone levels within normal levels before treatment, after treatment as well as after follow up, suggesting the clinical safety of the trial drug. Importantly, no adverse effects were identified throughout both the study and follow-up periods. Consequently, considering its overall safety and clinical effectiveness, *Abhrakadi Yogam* stands as a viable and safe treatment option for individuals with Type 2 DM.

## REFERENCES

1. Harsh Mohan, Textbook of Pathology. In: Jaypee brothers medical publishers(P) Ltd., 7<sup>th</sup> ed, 2015, p.808
2. IDF diabetes Atlas [Internet]. Global findings 2021 Diabetesatlas.org. Available from: from <https://diabetesatlas.org/>
3. Susruta. Susruta Samhita, with Nibandhasangraha Commentary of Dalhana, [Sarira Sthana 9/12](#)
4. Yoga Ratnakara. Edited and translated by Dr.Madham Shetty Suresh Babu, Utharardha, Prameha Chikitsa 1<sup>st</sup> edition 2002. Varanasi: Chowkhamba Sanskrit Series Office sloka. no. 148. P.802
5. Pradeepa R, Mohan V. Epidemiology of type 2 diabetes in India. Indian J Ophthalmol. 2021 Nov; 69(11):2932-2938. doi: 10.4103/ijo.IJO\_1627\_21. PMID: 34708726; PMCID: PMC8725109.
6. Harrison. Harrison's Principles of Internal Medicine Kasper, Hauser, Braunwald, Longo, Fauci, Jameson 16<sup>th</sup> edition, Diabetes Mellitus, Alvin C. Powers, Ch. no.344.P.2989
7. Kamalakar, Banishi Saboo, Sadikot's International Textbook of Diabetes, Jaypee brothers medical publishers (P) Ltd, 1<sup>st</sup> ed., 2019. Pg.no.2
8. Kasper, Hauser, Braunwald, Longo, Fauci, Jameson, Harrison's Principles of Internal Medicine 16<sup>th</sup> edition, chapter 323 Diabetes Mellitus, Alvin C. Powers, Pg.2974

### Cite this article as:

Krishna G S, L Mahadevan, Kasthuri Nair A, Arun Pratap. Efficacy of Abhrakadi Yogam in Managing Type II Diabetes Mellitus. AYUSHDHARA, 2023;10(6):140-147. <https://doi.org/10.47070/ayushdhara.v10i6.1449>

Source of support: Nil, Conflict of interest: None Declared

### \*Address for correspondence

Dr. Krishna G

PG Scholar,  
Department of Kayachikitsa,  
Pankajakasthuri Ayurveda  
Medical College & PG Centre,  
Thiruvananthapuram, Kerala.  
Email: [gskrishna230@gmail.com](mailto:gskrishna230@gmail.com)  
Ph: 9074051306