

## Management of *Madhumegam* (Diabetes Mellitus) and its Complication in Siddha Medicine with *Varmam* - A Case Series

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### ABSTRACT:

*Madhumegam* (Diabetes mellitus), also known as *Neerizhivu* in the Siddha medical system, is characterized by polyuria, which leads to the degeneration of seven *thathus* (body tissues) and disorder. Pathophysiological signs and symptoms mentioned in the Siddha system of medicine are consistent with diabetes mellitus in modern medicine. Excessive intake of foods rich in carbohydrates, non-vegetarian foods, and lifestyle imbalance are the causative factors in developing *madhumegam* according to the Siddha system of medicine. Over the past three decades, the prevalence of diabetes mellitus has increased substantially in India due to rapid socioeconomic development, demographic shifts, and greater susceptibility among Indian people. A survey by the ICMR reveals that 134 million Indians over the age of 18 are predicted to have type 2 diabetes by 2045. Due to the sedentary work culture of our current young generation (18 to 40 years old), people are vulnerable to developing diabetes and associated problems. Siddha system of medicine has many drugs and formulations (*Madhumega Choornam*, *Abragha Chendooram*, *Avarampoo Theeneer*, etc.) for *Madhumegam* and its complications. Many proven studies show the efficacy of Siddha medicine in the management of diabetes. Siddha *varmam* is essential in preventing diabetic complications like chronic hypertension, cardiac failure, renal failure, etc. This case series shows the complete management of diabetic patients and the prevention of its complications.

**KEYWORDS:** *Meganoi*, *Neerizhivu*, *Avarampoo Theeneer*, *Miguneer*, *Enippu Neer*, *Udal Thathu*.

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### INTRODUCTION:

*Madhumegam* (Diabetes mellitus), also known as *Neerizhivu* in the Siddha system of medicine is characterized by frequent and excessive quantity of urine output

(polyuria) resulting in the deterioration of seven *thathus* (body constituents) leading to multisystem disorder. [1] In modern medicine, the above symptoms coincide with diabetes mellitus which is defined as

hyperglycemia with the disparity in carbohydrate, fat and protein metabolism which results from a deficiency of insulin secretion. According to estimates, 77 million Indians over the age of 18 have type 2 diabetes, and almost 25 million are prediabetics (with an increased risk of developing the disease shortly) which is expected to rise to over 134 million by 2045. [2] Excessive intake of food rich in carbohydrates, fat and non-vegetarian food, excessive indulgence in intercourse, worry, tension, laziness and sedentary work were the causative factors in developing *madhumegam* according to the Siddha system of medicine. Siddha *Yugimuni* has classified *madhumegam* into 20 types based on colour, consistency and the smell of urine and other associated bodily symptoms and their complications. [3] A body mass index (BMI) of 18.5-22 kg/m<sup>2</sup> is considered healthy for Asians, according to World Health Organization (WHO) recommendations. Asian Indians have lower BMI than many other races, nevertheless, the association between BMI and glucose intolerance is just as strong in any other community. The risk of diabetes is significant for both genders in the urban Indian population with a BMI of more than 23 kg/m<sup>2</sup>. An ICMR study reveals around 25 % of diabetic patients of rural residents in India sought care from AYUSH practitioners. [4] Promotion and extension of AYUSH services in metropolitan areas, as well as improving knowledge among young individuals, are preferable options for reducing the existing and future stress on healthcare systems. [4] Combining allopathic and Siddha system of medicine as a holistic approach to diabetes can assist health systems in addressing the mounting burden. A randomized control trial on diabetic patients with *madhumega choornam* showed promising antidiabetic activity in Type II diabetes and its complications. [5]

Complications of *madhumegam* were documented by Siddha *yugimuni* in his treatise *Yugimuni Vaidya Chintamani as Avattaikal*. Ten types of *Avattaikal* were an increase in body weight with rigidity, dilatation of urethra with depletion in the semen, accumulation of excess gas in the stomach, excessive thirst, restlessness in the bed, nausea, tastelessness, abscess formation with germ manifestation, deep breath (a sign of Kussmaul's breathing), nocturnal diarrhoea with a loss of weight and energy to move. [6] Many potential Siddha preparations are practised for diabetes management in the Siddha system of medicine. [7] *Varmam* maneuver and *Varma* points stimulation are also helpful for the management of diabetes. [8] The following case series presentation shows the efficacy of Siddha medicine in the management of *madhumegam* and its complications.

#### **CASE PRESENTATION:**

##### **Case 1**

A 72-year-old male known case of diabetes mellitus with hypertension and taking modern medicine for the past 38 years. For the past 5 years, he has had complaints of flatulence, bad odour from the mouth, urinary incontinence, loss of weight, pain, and restriction of movements in the hip joint and shoulder joint. His recent blood sugar level was not under control with the regular antidiabetic and antihypertensive medication because of non-responsiveness to oral medication. Complaints of gastric irritation and stomach discomfort after taking the above oral medication. The physician/diabetologist advised Insulin (Human Mixtard 70/30 Suspension injection 100IU/ml) and to stop the oral medication. after one month of Inj. Insulin introduction, blood sugar came to control and other above complaints persisted and for the same, they

visited for the Siddha medicine treatment. on examination: BP-130/84mmHg, Pulse rate:78/min. weight- 56 kg. Siddha aspect of examination: *Enn vagai theyrvu* (eight tools of examination)

*Nadi: pithavatham*/Slow, bounding, regular), urine: cloudy and frothy, Stool: dried, black-coloured, hard pellet stools once a day. Skin: dry (no moisture) colour/complexion: Brown, Tongue: white coating present, eyes: normal, and mouth: a bad odour.

### Case 2

A 38-year-old male patient came with complaints of discomfort in digestion, pain, and irritation in the genital region along with purulent discharge, dry skin and difficulty in passing stools on and off. His blood sugar level in fasting is 180 and postprandial is 240mg/dl. urine routine shows 10-15 pus cells. The patient himself changed his diet pattern with fewer carbohydrates and more protein and fibre-rich foods. on examination: BP-130/84mmHg, Pulse rate:78/min. weight- 86 kg. BMI- shows overweight. the patient visited for the above complaints and was not willing to take modern medicine and they visited for Siddha medicine advice and treatment. Siddha aspect of examination: *Enn vagai theyrvu* (eight tools of examination)*Nadi: pithakabham*/ moderate broad regular pulse) urine: yellowish frothy, Stool: dark yellow coloured, regular bowel movement sometimes hot sticky stools. Skin: oily nature, colour/complexion: brownish yellow, Tongue: no coating, eyes: normal and mouth: no abnormality

### Case 3

A 55-year-old female patient came with the complaint of severe hair loss, and dark black colour skin plaque in the palm of both hands with itching on and off. Eye irritation and burning sensation throughout the year and she used to shift her residence every 4 years once and lived in different geographical

regions. She has been under anti-diabetic treatment for the past 10 years with modern medicine and Siddha medicine. She walks 5 kilometres daily and takes millet-based and rich fibre food in her routine diet. The urine routine shows no abnormality. on examination: BP-124/88 mmHg, Pulse rate:88/min. weight- 74 kg. BMI- normal. the patient visited for the above long-standing unresolved complaints and requested treatment through Siddha medicine. Siddha aspect of examination: *Enn vagai theyrvu* (eight tools of examination) *Nadi: pithavatham*/spiking regular pulse) urine: yellow/normal, Stool: dark yellow coloured, constipated mildly. Skin: dry, colour/complexion: dark brown, Tongue: no coating, eyes: normal, and mouth: no abnormality.

### Case 4

A 60-year-old male patient came with the complaint of long-standing low back pain radiating towards to back of the thigh. Took treatment in modern medicine (internal and physiotherapy) for the past 6 months and have not shown any major improvement. Taking treatment for diabetes for the past 15 years with oral medication Metformin 500 mg twice a day. And for hypertension (Amlodipine 5mg + Atenolol 50mg) for the past 13 years. Blood pressure 133/86mmHg. Difficulty in passing stools for the past 2 years and dryness in the mouth and skin. The patient visits the clinic for the above complaint for Siddha line of treatment for his long-standing symptoms. His recent blood sugar and blood pressure showed normal. Siddha aspect of examination: *Enn vagai theyrvu* (eight tools of examination) *Nadi: vathakabham*/low pitch regular pulse) urine: yellow/normal, Stool: dark-coloured, constipated, Skin: dry, colour/complexion: dark brown, Tongue: no coating, eyes: normal, and mouth: no abnormality.

**Case 5**

A 42-year-old male recently diagnosed with diabetes mellitus with the complaint of a sudden loss of weight, increase in the frequency of passing urine and stools, excessive tiredness and perspiration observed. admitted to the hospital and his blood sugar level on fasting is 321 & PP- 426 and HbA1c is 9.4. Advised on insulin and other multivitamin tablets. BP 140/76mmHg.No previous history of

chronic disease. Visited the clinic for the Siddha line of treatment.Siddha aspect of examination: *Enn vagai theyrvu* (eight tools of examination) *Nadi: vatha pittam* (fast low bounding pulse) urine: yellowish white, Stool: pale yellow loose stools. Skin: mild moisture present, colour/complexion: dusky, Tongue: no coating, eyes: normal, and mouth: no abnormality.

The clinical and personal details of each case are mentioned in Table 1.

**Table -1: Clinical and personal details of diabetic patients:**

Descriptio n	Case 1	Case 2	Case 3	Case 4	Case 5
Age	72	42	55	64	43
Gender	Male	Male	Female	Male	Male
Occupation	Retd. teacher	IT Employee	Homemaker	Consultant	Stock keeper
Complaints	Flatulence, Bad odour from mouth, Urinary incontinence, Loss of weight, pain and restriction of movements	discomfort in the stomach, pain and irritation in the genital region, dryness in the skin and constipation	loss of hair, burning sensation in the eyes, excessive dryness in the skin	Long-standing low back pain radiating towards the back thigh, Difficulty in passing stools, dryness in the mouth and skin.	Sudden loss of weight, increase in the frequency of passing urine and stools, Excessive tiredness, Perspiration
Duration of diabetes	38yrs	1 yr.	10 yrs.	15 yrs.	2 months
Personal history	retired family man lifestyle/south Indian diet, non-vegetarian	sedentary lifestyle and regular South Indian diet. non-vegetarian	sedentary lifestyle and regular South Indian diet.non-vegetarian	sedentary lifestyle and regular South Indian diet.non-vegetarian	sedentary lifestyle and regular South Indian diet.non-vegetarian
Family history	Father - diabetes	mother - diabetes	no	no	No
Treatment	metformin 500mg and Glimpiride 1mg twice a day for the past 25	Managing Diet and lifestyle	on glimepiride 2mg and Traditional medicine on and off	Metformin 750 mg for the past 12 years	Insulin - Human mixtard 70/30 -24units twice a day

	years and Inj.Insulin - 20units in morning and 12units in night last 4years				
Side effects of present treatment	Stomach belching, Constipation , and overall dryness in the skin aggravate while taking the above medicine	NA	dryness on the skin and a burning sensation	constipation and continuous radiating pain in the thigh muscle not responding to modern treatment	NA
Blood sugar level (Fasting - FBS and Postprandia l-PPBS (mg/dl)	FBS-205 PPBS-340	FBS 160 PPBS -256	FBS 148 PPBS -270	FBS -138 PPBS - 310	FBS -270 PPBS -480
HbA1C	10.9	7.90	7.30	7.70	10.40
alcohol consumption and tobacco	No	No	No	No	No

**Table-2: Details of Medication and their mode of action:**

Medicine	Anupanam	Dosage	Indication	Mode of action	Reference
<i>Thanneervittan nei</i>	Melt in double boiling method	5 ml Once a day	Increased <i>agni</i> along dry heat ( <i>Pitta vatham</i> )	reduce the increased <i>agni</i> in the senner(blood)	The Siddha Formulary of India.pg no 133
<i>Avarampoo theeneer</i>	Lukewarm Water	5 ml Twice a day Before food	<i>mega noigal</i>	reduces the blood sugar level in the blood	chikitratna deepam/ Earth India Naturals Pvt Ltd product

					description pg.75
<i>Sanjeevi theeneer</i>	Lukewarm Water	5 ml Twice a day Before food	<i>mega noigal</i>	purifies and increases the blood production by stimulating the spleen	The Siddha Formulary of India/ Earth India Naturals Pvt Ltd product description pg no 75
<i>Maantha theeneer</i>	Lukewarm Water	5 ml Twice a day Before food	removes <i>amam</i> (toxin accumulated over period in alimentary tract)	clears the mucus plug in the stomach and regularises the <i>agni</i>	veermamunivar Nasakaandam Earth India Naturals Pvt Ltd product description pg no 75
<i>Madhumega chooranam</i>	Lukewarm Water	3g Twice a day	<i>madhumegam</i> (diabetes)	Because of its bitter and astringent taste, it reduces blood sugar periodically	Hospital Pharmacopoeia GSM Palayamkottai /SKM product details pg. no NA
<i>Manjal noi Kudineer</i>	NA	60ml once a day	hepatoprotective	works on the liver <i>agni (ranjaga pittam)</i> and regularises overall metabolism	The Siddha Formulary of India/ Earth India Naturals Pvt Ltd product description pg no 13
<i>Maha Megarajanga tailam</i>	Lukewarm water	5 ml Once a day at bedtime	to dissolve tumours and rejuvenate normal cells	clears <i>amam</i> (mucus plug) from the body cells facilitates to rejuvenate	Theraiyar taila verga surrukam pg no 155
<i>kumari ennai</i>	Lukewarm water	5 ml Once a day at bedtime	regulates <i>Abana vayu</i>	Works on intestine and removes deigned <i>thathus</i>	SKM anubava Murai pg no 62

**Table- 3: DIET and Oil bath details:**

Time	Food advice
Early morning	Green tea, lemon tea, ginger tea
Morning - 8 am	Fermented/non-fermented rice gruel with small onion
Morning - 10 am	Fermented/non-fermented rice gruel with small onion
Lunch 12-1 pm	Red rice, sambar, rasam, buttermilk, leafy and fibre vegetables
Evening 4-5 pm	Sundal variety, Pomegranate, Badam, pista, peanut candy, fried green gram laddu
Night - 8 pm	Red rice idly, Pongal, idiyappam, raw rice kichadi with small onion chutney, curry leaves or coriander leaves chutney.
Foods to be avoided	Refined wheat, curd, egg, chicken, mushroom, banana, paneer(cheese), bitter gourd
Food options	Panchamutti (millet and pulse mix) gruel, red rice gruel, finger millet gruel, Foxtail millet gruel, Sesame rice, Elephant foot yam gravy, Coccinia Broad beans, Sessile leaves, Buffalo milk
Oil bath:	Oil: Sesame oil/day- Wednesday / Saturday for male.Friday&Tuesday for female.Just apply without giving intense rub/pressure. use shikakai and warm water for the bath. Use <i>Ulundhu Tailam</i> as <i>pidi</i> tailam in the evening. (For muscle strength & flacidity)

**Table- 4: Details of the Varmam application applied in the cases:**

Varmam maneuver and points stimulated	Case 1	Case 2	Case 3	Case 4	Case 5
<i>Dasa vayu pinnal</i>	done (15 days once)	done(30 days once)	done (15 days once)	done (15 days once)	Done (30 days once)
<i>ner varmam, undhi varmam,mundal varmam,eral varmam</i>	done (15 days once)	NA	done (15 days once)	done (15 days once)	NA
<i>Vasthi varmam ,thunnal mudichu varmam</i>	done (15 days once)	NA	NA	NA	NA

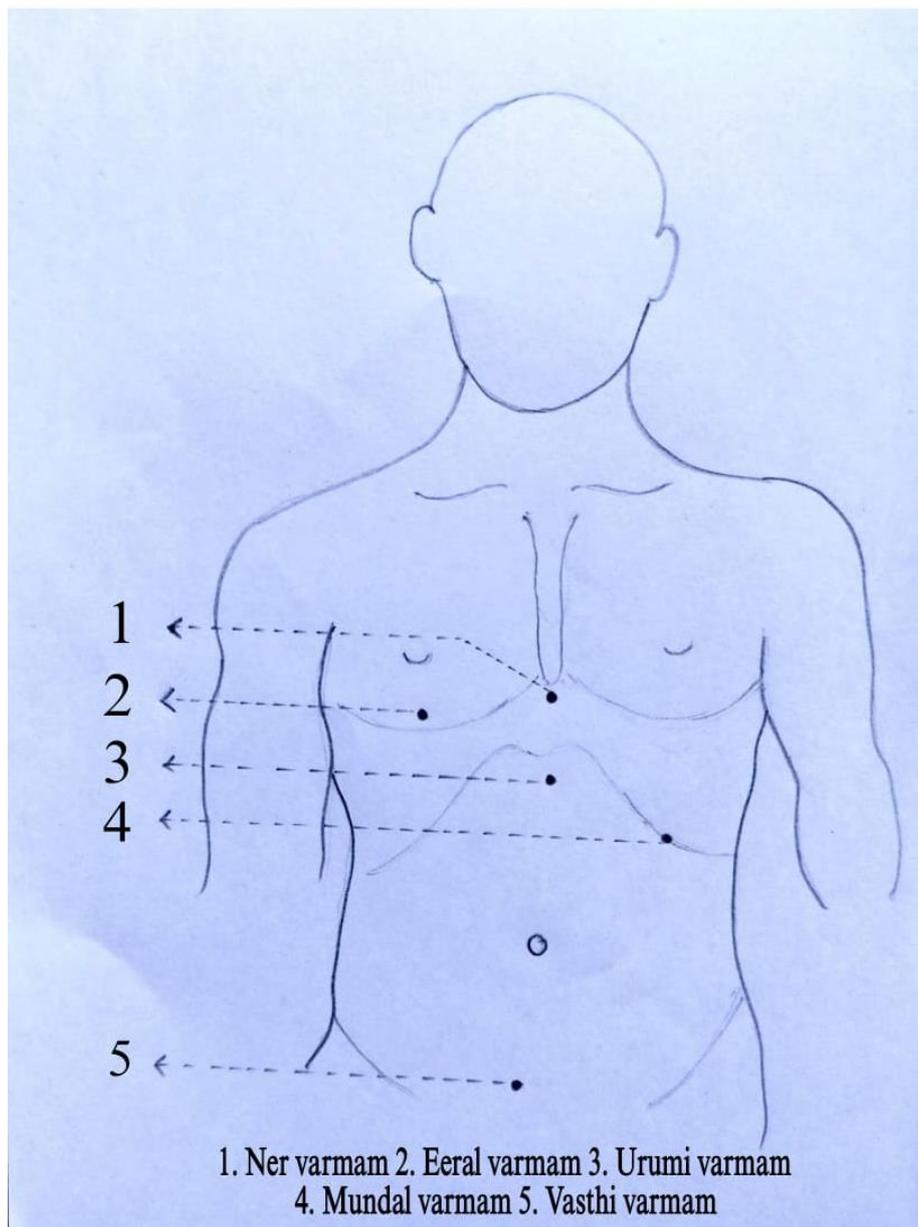


Figure 1 Varmam Points location

#### RESULTS AND DISCUSSION:

Generally, in the Siddha system of medicine management of diabetes is approached with the current precipitating symptom and assessing the level of damage to the *udal thathus* (body tissues) and rejuvenating and restoring them. a case series by Vijay Kumar et al highlights the significance of Siddha medicine in the management of newly diagnosed and uncontrolled diabetic patients within a span of 3 three-month

treatment regimens.<sup>[9]</sup> Our study followed up every 15 days for the assessment of the symptoms and planned remedial measures at that time point depending on the feedback from the patients. Due to the variation in severity of the disease condition and its recovery, the treatment period may vary between our patients in our observation. Complications of *Madhumegam (Avattaika)* were studied by the National Institute of Siddha revealing that 51% of diabetic

patients suffer from obesity [10] and our case series witnessed more insulin resistance and musculoskeletal complications. All the above cases were thoroughly examined and depended on the symptoms and assessment of their *udal thathu* status through a pulse reading, treatment was prescribed. Start with an oil bath (depending on the constitutional basis) and address the increased blood sugar levels through *Madhumega choornam* and restore the deprived components of *udal thathu* (body tissue) with *Thanneervittan nei*. *Manjal noi kudineer* will deprive the *ranjaga pittam* to regularise the metabolism in the liver and *kumari ennai* will settle down the *pitta vayu* and eliminate toxins in the bowel. Moreover, the Patient's long-standing mental and physical complaints were approached with specific internal and external medication, *varmam* application and counselling on diet and lifestyle modification. Table 2 describes the medication and its indication.

All the diabetic patients came for the complaint of long-standing symptoms which may or may not be influenced by diabetes and despair about the healthiness even though the medication, diet and lifestyle are strictly adhered to recommendations by diabetologists. All the patients were psychologically disturbed either they experienced stress or anxiety on the condition/disease. we approached the body and mind holistically through the expression of *tridhosam* (*vatham, pitham, kabham*) along with pulse reading (assessment of *Nadi*) and the attitude with which they express and communicate. Internal medication and counselling individually on the body's constitution and reversing the way of progressing nature of the disease on periodic episodes had resulted in the patients managing and overcoming the chronic ailments and psychological issues. *varmam* application ultimately

regularised the rearranged *dasa vayus* which helps the patients in regulating the mind and body's physiological functioning through the proper flow of energy.[11]. Table 4 explains the *varmam* application and its duration and Figure 1 illustrates *varmam* points.

Case 1 is a chronic diabetic patient who got weight loss and muscle instability (deterioration of *udal thathu*) due to excess *vatham*, who started with the Siddha line of treatment along with *varmam* (*varmam points correcting dasa vayukkal - dasa vayu pinnal*) treatment for the past one year. Urinary incontinence has been reduced consistently from the first month and totally under control in 3rd month with intervention *varmam* manoeuvre (*vasthi varmam*-for kidney and bladder functioning). [12] Bowel movement was regulated. Maintenance of blood sugar levels has been significantly controlled after the initiation of treatment no 1,2,3,4,5,7 (Table 2). Stomach complaints and joint restrictions have been resolved by 80% and continue to lead a painless lifestyle. Following regular oil baths as prescribed. blood sugar levels after 120 days of treatment were 130mg /dl and 189 mg /dl on fasting and Postprandial respectively and HbA1C came down to 9.3 from 10.9.

Case 2 has already managed blood sugar levels with diet control and lifestyle modification on and off but still got increased blood sugar levels, pain and ulcers in the penis, and dryness of the mouth. Advised treatment no 1,5,6,7 (Table 2) along with an oil bath twice a week with a recommended diet chart (Table 3). The Patient was relieved from the above symptoms and continued to have a controlled sugar level at the 30-day treatment follow-up visit. The stress level was significantly controlled and managed. Blood sugar levels were 78 mg/dl and 156 mg/dl on fasting and postprandial respectively. HbA1c is 6.1%.

Case 3 Female got hair loss of almost 80% and burning eyes and irritation (throughout years) along with skin dryness all over the body and blackening of skin in the palm with itching. Withdrawn from antihyperglycemic drugs from modern medicine and started taking treatment no 1,2,3,4,5,8 (Table 2) along the diet chart (Table 3) recommended oil bath specifically with melted ghee. burning sensation and blackening of skin have been reduced after 1 month of treatment. Hair loss was controlled significantly. After 45 days of treatment follow-up blood sugar level was maintained within the normal range (Blood sugar fasting -120 mg/dL PP-156mg/dL HbA1c is 5.8%. The patient was psychologically relieved from her hair loss problem due to her complexity reason.

Case 4 male got severe pain in the thigh radiating to the calf muscle not resolving to NSAIDs and physiotherapy for the past 2 years. Dryness all over the skin and constipation on and off. Treatment no 1,2,3,4,5,7,8 (Table 2) along with an oil bath specifically with castor oil twice a day and recommended diet chart (Table 3). pain reduced by almost 95% and aggravates only on travelling and settles down while continuing the same treatment protocol and bowel movements regulated and blood sugar level fasting -98mg/dl and postprandial-167 mg/dL on the 90th-day follow-up visit. HbA1c is 6.3%.

Case 5 freshly diagnosed diabetes with increased frequency of urine output and extreme tiredness and dryness in the mouth and loose stools. The patient is on Insulin injection. Treatment no 1,2,3,4,5,6 (Table 2) was advised, and a diet chart (Table 3) was recommended. Within one week patient recovered from the above symptoms. After 15 days of the follow-up visit, the patient was advised to take an oil bath with a mixture of castor oil, cow ghee, and sesame oil in a ratio of 3:2:1. after one month HbA1c was reduced

from 10.1 to 7.3 and insulin dosage was reduced to 12 IU twice a day along with the above treatment.

In this current modern generation, people are very conscious about their health and require rational treatment when they suffer from long-standing physical or mental issues. As Siddha system of Medicine approaches the disease holistically and can provide proper treatment for specific conditions

#### **CONCLUSION:**

Siddha system of medicine controls the blood sugar level at a moderate level and along with insulin, it controls severe chronic diabetic cases and its complications. A holistic approach to Type 2 diabetes will bring down the complications and multisystem failure.

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#### **Informed Consent:**

The consent from the patient was duly taken for publication.

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