



ANALYSIS OF VARIOUS PRESCRIPTION PRACTICES AMONG SIDDHA PHYSICIANS IN THE TREATMENT OF KARASTHAMB VATHAM DUE TO MADHUMEGAM (PERIPHERAL NEUROPATHY IN DIABETES MELLITUS) IN AND AROUND CHENNAI-- A CROSS SECTIONAL STUDY

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ABSTRACT

Prescription for Karasthamba Vatham (KTV) due to Madhumegam (MM) (PERIPHERAL NEUROPATHY IN DIABETES MELLITUS) is important in general practice in siddha as Diabetic peripheral Neuropathy (DPN) prevalence in India vary widely from 9.6% to 78% in different populations. The study aimed to explore and analyse the prescriptions given to the patients with KTV due to MM and documenting the drugs of choice and line of treatment given by the siddha physicians including registered traditional siddha practitioners. This study was carried out in Siddha clinics and hospitals in and around Chennai, conducted for a period of 3 months after getting IEC approval. Data were collected by having questionnaire interview with Siddha practitioners including registered traditional siddha practitioners with prior appointment and consent. The study gives insight on various drug of choices of Siddha physicians in the management of KTV in MM, of which Madhumega chooranam, Amukkra chooranam, Avarai kudineer, pinda thailam, karpoorathy thailam are commonly used. The result of the study may enable us to have a collection of standard drugs and we may come to a conclusion about unique formulation in drug of choice and line of treatment prescribed by the Siddha practitioners for KTV due to MM (DPN). This will be beneficial for the upcoming Siddha doctors in getting a clear idea in treating the disease.

KEY WORDS: *KarasThambavatham (KTV), Madhumegam (MM), Diabetic Peripheral neuropathy(DPN), Prescription practice, Siddha physicians*

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1. Introduction

Siddha medicine is an ancient medicine which has its origin in Southern India. It is one of the earliest systems of medicine. This medicine was first introduced and practiced by Siddhars and hence the name. Agasthiyar was the head of them all. Siddha system is based on three humours vadhams, pitham and kapam. Any imbalance in these three humours can cause diseases. Siddha medicine is focused mainly on balancing these three humours, thereby treating the disease and strengthening the soul.

Among so many diseases being treated with Siddha medicines, MadhuMegam (MM) and KarasThambaVadhams (KTV) are the diseases, which the author believes to be very common and debilitating. In other words MadhuMegam and KarasThambaVadhams correlates with Diabetic Peripheral Neuropathy (DPN) which is not only a health burden for the nation but for the world.

Diabetes mellitus is a clinical syndrome characterised by increase in plasma blood glucose (Hyperglycemia). There are two types of diabetes mellitus, Type I and Type II. Type I Diabetes Mellitus is caused by autoimmune destruction of beta cells in the pancreas, resulting in absolute insulin deficiency, whereas Type II Diabetes Mellitus is due to insulin deficiency or defective action of insulin or both [1]. Chronic hyperglycemia is responsible for diabetes specific microvascular complications affecting the eyes (retinopathy), kidneys (nephropathy) and feet (neuropathy). India is deemed as the world's capital of diabetes. The diabetic population in the country close to hitting the alarming mark of 69.9 million by 2030 [2]. This global pandemic is associated with obesity, unsatisfactory diet, sedentary life style and increased urbanisation.

Peripheral Neuropathy starts as pins and needles sensation, tingling, numbness and sometimes burning sensation, first in the stocking, gloves area, ultimately involving the whole body. It affects lower limb first. Gradual loss of touch, pain and temperature sensations may be seen which is followed by easy traumatization, ulceration, burning sensation. Sensory ataxia may develop in later stage. There may be weakness of fingers and

toes leading to difficulty in holding objects, weakness in the grip and in course of time complete loss of motor power. Muscles will undergo wasting and gradually wrist drop, foot drop and claw like deformity of hand and feet may develop. Patient may not be able to walk in late stages [3].

There is high prevalence of peripheral neuropathy among diabetic patients. Diabetic peripheral Neuropathy prevalence in India varies widely from 9.6% to 78% in different populations [4]. Diabetic peripheral neuropathy is the third most common form of neuropathy and it ranges from 54% among 1,00,000 people per year. Prevalence rate of neuropathy ranges 8.54% in type I and 13.46% in type II diabetic patients [5].

Various epidemiological studies from India showed wide prevalence varying from 5 to 2400 per 10,000 population in different community studies [6]. Prevalence of PN in diabetic patients ranges from around 10.5% to 32.2% in various studies across India [6] and up to 50% patients will eventually develop neuropathy during the course of their disease according to Western literature [7].

The exact mechanisms behind the pathogenesis of DPN are still unknown due to the multifactorial nature of the disease; however, chronic hyperglycemia with a significant drop in insulin sensitivity seems to be at the forefront of DPN causes [18]. Muscle specific glucose uptake, microvascular perfusion, and neural drive seem to be key components in the development of DPN and important mediators of the response to exercise interventions among those with type 2 diabetes (T2D).

These diseases have been treated by Siddha physicians for so many years but doesn't have any established treatment protocol. The author has tried to collect the most common, genuine and rational prescriptions which could be followed by the new generation of Siddha physicians and could be made a definite treatment regime. The study aimed to analyse the prescriptions given to the patients with KTV due to MM by Siddha physicians.

2. Materials and Methods

2.1. Study Design

This cross-sectional study was conducted in Siddha Clinics and Hospitals in and around Chennai, Tamil Nadu, India.

2.2. Ethical Clearance

Study proposal was duly approved by Institutional Ethical Committee, GSMC, Chennai. (IEC NO: GSMC-CH-3466/ME-2/030/2022)

2.3. Sample Size and Selection

Sample size was fixed by IEC and was 50 Siddha physicians including registered traditional siddha practitioners treating KTV due to MM in and around Chennai. Samples were selected randomly, on the basis of convenience and proximity.

2.4. Data Collection

The study was initiated after obtaining permission from IEC. With prior appointment and consent, after explaining the study to the physicians, structured interviews (questionnaire based) were conducted and their responses were recorded. The questionnaire was developed from pretested structured questionnaire based on objectives, taking guidance from three senior lecturers and peer reviewed by PG scholars. It was subsequently modified as per suggestions and got approval for the same from IEC, GSMC, Chennai, Tamil Nadu, India.

2.5. Study Duration

The study was conducted for a period of 3 months.

2.6. Statistical Analysis

Data were analysed by having the personal details closed. The data were classified and analysed under following heads: Method of diagnosis, Pre-treatment procedures, Drugs of choice (internal and external treatment), Varma therapy, recommendation of yoga, advising diet and exercise.

3. Results

In this current study, a total of 50 siddha physicians including traditional siddha practitioners were interviewed on questionnaire basis. Method of diagnosis used in diagnosing KTV due to MM is shown in table:1. It was found that 68% (34) physicians used both method for diagnosis. Exactly 16% (8) physicians used Envagai thervu and another 16% (8) physicians used Modern

Examination and investigation for the diagnosis of KTV due to MM.

Table 1: Method of diagnosis used by physicians for KTV in MM

Method of Diagnosis	Frequency	Percent
Both Siddha and modern methods of examination and investigations	34	68.0
Envagaitervu(siddha method of examination and investigation)	8	16.0
Modern Examination and investigation	8	16.0
Total	50	100.0

Usage of Envagai thervu by siddha physicians in diagnosing KTV due to MM is shown in table 2. Out of the 8 siddha physicians, 3(37.5%) used all Envagai thervu diagnosis methods, 2(25%) siddha physicians used Naadi alone, 1(12.5%) siddha physician used “Naa, Niram, Vizhi and Naadi”. Another one 1(12.5%) physician used “Niram, Malam and Naadi”. Other one physician used “Sparisam & Naadi” for diagnosis of KTV due to MM.

Table 2: What do physicians see in Envagai thervu

Envagai thervu	Frequency	Percentage
ALL	3	37.5
*6	2	25
*1,2,4,6	1	12.5
*2,7,8	1	12.5
*5,6	1	12.5

*1=Naa,2=Niram,3=Mozhi,4=Vizhi,5=Sparisam,6=Naadi,7=Malam,8=Moothiram.

Siddha physicians giving pre-treatment protocol is shown in Table:3.

Table 3: Siddha physicians pre-treatment protocol.

Pre-treatment protocol	Frequency	Percent
Giving	23	46.0
Not giving	27	54.0
Total	50	100.0

23 siddha physicians out of 50, follow pre-treatment protocol and 27 out of 50 were not following pre-treatment protocol. Frequently used top 5 medicines used for pre-treatment were shown in Table:4 Agasthiyar kulambu, Murukkan vithai maathirai, Siddhathi ennai, Anu thailam, Sukku thailam were commonly and frequently prescribed by siddha physicians.

Table 4: Top 5 Medicines used for pre-treatment protocol

S.No	Medicines	Frequency	Percent
1.	Agasthiyar kulambu	13	36.11
2.	Murukkan vithai maathirai	5	13.89
3.	Siddhathi ennai	4	11.11
4.	Anu thailam	2	5.56
5.	Sukku thailam	2	5.56

Top 5 Internal and External medicines are shown in Table:5 & 6. Amukkara chooranam, madhumega chooranam, Aavarai kudineer, Tribala chooranam, Annabedhi chendooram were commonly and frequently prescribed Internal medicines by siddha physicians for the treatment of KTV due to MM. Pinda thailam, Karpoorathy thailam, Kungilia Vennai, Santhanathi thailam, Arugan thailam were commonly and frequently prescribed External medicines by siddha physicians for the treatment of KTV due to MM.

Table 5: Top 5 Internal medicines commonly prescribed by siddha physicians

S.No	Medicines	Frequency	Percent
1.	Amukkara chooranam	20	9.85
2.	Madhumega chooranam	18	8.87
3.	Aavarai kudineer	12	5.91
4.	Triphala chooranam	6	2.96
5.	Annabedhi chendooram	5	2.46

Table 6: Top 5 External medicines commonly prescribed by siddha physicians

S.No	Medicines	Frequency	Percent
1.	Pinda thailam	10	13.16
2.	Karpoorathy thailam	9	11.84
3.	Kungilia vennai	5	6.58
4.	Santhanathi thailam	4	5.26
5.	Arugan thailam	4	5.26

Table:7 shows number of physicians giving varma therapy. Out of 50, 15 siddha physicians were giving varma therapy for DPN and remaining 35 siddha physicians were not giving varma therapy.

Table 7: Siddha physicians giving Varma therapy

Varma therapy	Frequency	Percent
No	35	70.0
Yes	15	30.0
Total	50	100.0

22 Siddha physicians recommended yoga for DPN and it is shown in table 8. It was clear those 22 (44%) physicians were recommending yoga therapy in the treatment of KTV in MM, remaining 28(56%) physicians were not recommending yoga therapy. Table: 9 shows the top 5 recommended aasanas for KTV due to MM by siddha physicians. Suryanamaskaram, Pranayamam, Tadasana, Sarpasana, Padahastasana were frequently recommended yoga for KTV due to MM.

Table 8: Siddha physicians recommending yoga therapy

Yoga therapy	Frequency	Percent
No	28	56.0
Yes	22	44.0
Total	50	100.0

Table 9: Top 5 Aasanas recommended by siddha physicians

S.No	Medicines	Frequency	Percent
1.	Suryanamaskaram	9	18.75
2.	Pranayamam	8	16.67
3.	Tadasana	4	8.33
4.	Sarpasana	4	8.33
5.	Padahastasana	3	6.25

Out of 50 Siddha physicians, 96% (48 physicians) of the physicians were advising patthiyam and only 4% (2 physicians) of the physicians are not advising patthiyam and is shown in table:10.

Table 10: Number of siddha physicians advising patthiyam

Advising patthiyam	Frequency	Percentage
No	2	4.0
Yes	48	96.0
Total	50	100.0

46(92%) of physicians were advising exercises to the KTV in MM patients and only 4(8%) were not advising any kind of exercises to the patients. It was also clear that 43(86%) of the physicians recommended walking and only 3(6%) recommended other types of exercises, is shown in table :11.

Table 11: Number of siddha physicians recommending exercise and type of exercise

Exercise	Kind of exercise			Total
	No	others	Walking	
No	4(8%)	0(0%)	0(0%)	4(8%)
Yes	0(0%)	3(6%)	43(86%)	46(92%)
Total	4(8%)	3(6%)	43(86%)	50(100%)

4. Discussion

Prescription analysis is usually done by collecting the prescriptions either from the patients or from pharmacist [8-10]. In Siddha system, collecting prescription is not possible because many Siddha physicians give their own names for some medicines (not literature name) moreover many physicians include their own preparation of medicine to treat their patients. Hence the study was conducted as structured interview. In the interview, the physicians were asked questions where they would answer whichever comes to the mind instantly without recalling the text book and their responses were noted. The findings were qualitatively analyzed and results were attached above.

Total of 56 Siddha physicians were met and interview was conducted. Out of 56, only 50 physicians were handling KTV due to MM. Few physicians are not handling this disease.

The objective of this investigation was to study the prescription practice among the siddha physicians who treat diabetic peripheral neuropathy. This study is all about acquiring knowledge of genuine, rational and standard prescription practice. The study also gives an insight on practice of external therapies like varma and yoga.

There is a high prevalence of peripheral neuropathy among diabetic patients. Diabetic peripheral Neuropathy prevalence in India vary widely from 9.6% to 78% in different population [4]. Diabetic peripheral neuropathy is the third most common form of neuropathy. and it ranges from 54% among 1,00,000 people per year. Prevalence rate of neuropathy ranges 8.54% in type I and 13.46% in type II diabetic patients [5]. However the prevalence could not be correlated with a successful or unsuccessful siddha practice, as most patients comes for siddha consultation only after developing complications.

Before going into the treatment, diagnosis is the most important part in clinical practice. Out of 50 Siddha physicians, 8 physicians practice Envagai thervu exclusively but in that 8 siddha physicians, only 3 physicians see all 8 thervu and another 8 physicians rely on modern methods in the diagnosis of KTV in MM. 34 physicians use both Siddha and modern method of diagnosis. Though they say that they practice Envagai thervu, they were not practicing all 8 types (Table:1 and Table:2). Envagai thervu is our strength and base of our system. Improving the Siddha method of

diagnosis will provide better understanding of the disease, hence better treatment as well.

In this study it was found that only 23 out of 50 siddha physicians give pre-treatment procedures to lower the deranged kuttram as per siddha text (Table:3). For veraesanam(purgation), Agasthiar Kulambu was commonly used by siddha physicians (Table :4).

Top 5 commonly and frequently used Internal and External medicines used for the treatment of KTV due to MM are as shown in Table:5 & 6. Amukkara chooranam (Aswagandha chooranam) has anti-hyperanalgesic effect[11],Madhumega chooranam ameliorates carbohydrate metabolism and oxidative stress in type II diabetes [12],Avarai kudineer has hypoglycemic effect[13], Triphala chooranam mitigates Diabetic neuropathy[14],Pinda thailam has anti-inflammatory activity [15],karpoorathy thailam act as counter irritant to dissipate severe nerve irritation were frequently used and these drugs can be taken as primary regime for DPN.

Varmam is the unique practice of siddha system. It was found that only 30% of physicians were giving varmam therapy for the treatment of KTV due to MM. Selected silambam sportspersons with diabetic peripheral neuropathy without injury and improve nerve function and reduced DPN while varma treatment. [16-17].

Though most of the siddha physicians know about effectiveness of yoga in the management of diabetic peripheral neuropathy [18-19], only 44% of physicians were recommending yoga therapy for the treatment of KTV in MM (Table:6).

As both exercise and consuming a ketogenic diet induce systemic and cellular changes that collectively improve complications associated with DPN. Both interventions may involve similar signaling pathways and benefits but also impact DPN through unique mechanisms[20].

The factors contributing to such a global burden is uncontrol diabetes and undisciplined lifestyle. Except few, almost all siddha physicians insist exercise and diet is shown in table :7 and 8. "Unavae marunthu" is the core concept of our medicine, 96% (48 cases) of the physicians were advising patthiyam and only 4% (2 cases) of the physicians were not advising patthiyam. As MM is a lifestyle disorder, emphasising diet restriction (patthiyam) is a must and is advised by most of the physicians.

Exercise can help increase the flow of blood, oxygen, and other nutrients to nerve cells, further helping to alleviate neuropathic symptoms [21-

23]. 46(92%) of siddha physicians advice exercises to KTV in MM patients. It was also clear that 43(86%) of the siddha physicians recommended walking and only 3(6%) recommended other types of exercises.

5. Conclusion

This study has shown the frequently used internal medicines, external medicines, varma and yoga therapy. This study has given insight upon all these practices by siddha physicians in the treatment of KTV in MM, which can be converted to a standard treatment regime in the management of Karas Thamba Vaatham in Madhu Megam.

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