

Evaluation of the Acute Effect of Thriphala Kathakan Pata Choornya in the Management of Blood Glucose Level in Diabetes Mellitus Type II – A Pilot Study

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Abstract:

Diabetes mellitus (madhumeha/Ikshumeha) is one of the conditions of refractory illness recognized by ancient medical scholars. Ayurvedic literature explains vividly the aetiology, pathogenesis, prognosis, complications, management and the causal relationship of nutritional, lifestyle, environmental and genetic influences scientifically attributed to it. Based on the form and stage of the disease, treatment modalities are planned and recommended.

Thripalakathakan Paatachoornaya was already given from the long time in the patients of the diabetic clinic of Provincial Ayurveda hospital-Pallekale, Srilanka, to reduce the blood glucose level. In there, good results were obtained from that drug when using prolong time to the Diabetic patients. Therefore this study was implemented to evaluate the acute effect in it. The research design of it as a pilot study. 10 patients were selected using Inclusion Criteria and Exclusion criteria. They were given the drug and test the blood glucose levels by using FBS and OGTT tests. As a control group, water was given to the same patients in their second visit. Then again the glucose levels were tested by the FBS and OGTT levels. According to this study the average of the glucose levels of this drug is less than when use with water in some testing periods. When comparing the P value in it, it is statistically insignificant at 5 percent significant level.

Despite the fact that there is a proof premise of this medication with constant administration of Diabetes, there might be a few issues with its intense impact. Along these lines to come out to the ideal resolution, the investigation test sample ought to be grow and the setting of the examination should be inward patients in the hospital. Subsequently here is an open field for new specialists to build a most accurate conclusion for this drug in future.

Keywords — Madumeha, Ikshumeha, Thripalakathakan Paatachoornaya, OGTT, FBS

I. INTRODUCTION

Diabetes mellitus is one of the most leading chronic, non-communicable disease which also found that it threat the life. The prevalence of this disease will be 5.4% by the year 2025, with the global Diabetic population reaching to 300 million. The common symptoms of this disease is frequent urination, increased hunger and thirst, decreased body weight, blurred vision and tiredness. In Ayurveda this disorder is under the Prameharoga. There are 20 types of Prameha. Most probable correlation of this disease is Madumeha and Ikshumeha. In the management of Ayurveda, it consists various therapeutic methods like Diet planning, exercise and Yoga. And also it contain great internal medicines in therapeutic basis.

Thripala Kathanpata Kashaya was found in Pramehachikitsa of Authentic text **Sara Sankshepaya**. The Author of this text is Brahmin sage Shri Chandra. But the history of this text book is controversial. Though this is an Indian book, its very rare to find this in India. But the Ola leaves of this text was founded from some Traditional Ayurvedic doctors in Sri Lanka. According to the history of Sri Lanka, some of the copies of this text was sent to the America and England. At 1865 Dr.D.H.S.Kavirathna has printed the first copy after correcting some issues. However this copy also not available today. After some corrections this text was again edited and republished by the Dr Aryadasa Kumarasinghe by the invitation of the Department of Ayurveda Sri Lanka. This copy is available throughout the country today.

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(SaraSankshepayā Chi.13/5)

A. Drug Review

Table 1- ingredients of the ThripalaKathakanPataChoorneya

Sanskrit Name	Scientific Name	Properties according to Ayurveda
1)Pata	<i>Cissampeolus pareira</i>	Rasa – Tikta Guna – Lagu, Tikshana Virya – Ushana Vipaka – Katu Karma – Alleviates Vata and Kapha
2)Harithaki	<i>Terminaliachebula</i>	Rasa – five tastes except Salt Astringent dominant Guna – Lagu, Ruksha Virya – Ushana Vipaka – Madhura
3)Vibhitaki	<i>Terminaliabelleirica</i>	Rasa – Kashaya Guna – Lagu, Ruksha Virya – Ushana Vipaka – Madhura
4)Amalaki	<i>Phyllanthusemblica</i>	Rasa – Five of the six tastes without Salt Guna – Lagu, Ruksha Virya – Sheetha Vipaka – Madhura
5)Mustha	<i>Cyperusrotundus</i>	Rasa – Tikta, Katu, Kashaya Guna – Lagu, Ruksha Virya – Sheetha Vipaka – Katu Karma – Alleviates Pitta and Kapha
6)Kathaka	<i>Strychnospotatorum</i>	Rasa – Madhura, Kashaya, Tiktha Guna – Lagu, vishada Virya – Sheetha Vipaka – Madhura Karma- KaphaVatashamaka
7) Jambu	<i>Syziiumcumini</i>	Rasa – Kashaya, Madhura, Amla Guna – Lagu, Ruksha Virya – Sheetha Vipaka – Madhura Karma – Balance pitta

		and Kapha
8)Nisha	<i>Curcuma longa</i>	Rasa - Thikta , Katu Guna -Laghu, Ruksha Virya - Ushna Vipaka - Katu Karma - KaphavataShamaka, Pitta rechaka, Pitta shamaka
9)Daruharidra	<i>Cosciniiumfenestratum</i>	Rasa- Tiktha Guna – Ruksha Virya – Ushna
10)Samanga	<i>Rubiocordifolia</i>	Rasa – Tikta, Kashaya, Madhura Guna – Guru, Ruksha Virya – Ushana Vipaka – Katu Karma – Alleviates Pitta and Kapha
11)Akuli	<i>Cassia auriculata</i>	Rasa – Kashaya, Tikta Guna – Lagu, Ruksha Virya – Sheetha Vipaka – Madura

B. Drug preparation

- To make it's choornaya these above mentioned ingredients were dried under sunlight .After that the all ingredients were powdered well separately and mix it with equal quantity from each ingredient.

II. Aims and objectives

- To evaluate the acute effect of ThripalaKathakanPataChoorneya in the management of Diabetes mellitus Type II.

III. Methodology

A. Selection of study population

All the 10 patients were selected from the Diabetic clinic of Provincial Ayurveda Hospital Pallekale

B. Criteria for selection of patients

1)Inclusion criteria

- ✓ Patients diagnose as Type II Diabetes
- ✓ Age 50 -70

- ✓ Sex- Male and female
- ✓ Regular patients in the Diabetic clinic
- ✓ Education level- Same or more than moderate level

D. Assessment criteria

- FBS levels and OGTT levels

2) Exclusion criteria

- ✓ Patients with Hyperlipidaemia, Hypertension and other chronic diseases.
- ✓ Irregular patients in Diabetic clinic.
- ✓ Patients who don't follow the instructions given by the Doctor

E. Data processing and Analysis

- A Non-Parametric test called Wilcoxon Sign Rank test was applied for testing the difference between two dependant samples.

C. Method

- ✓ Patients were selected from the diabetic clinic by using exclusion and inclusion criteria.
- ✓ All the selected patients were advised to have a same dinner including same food. In here they were given a instruction leaflet about this procedure.
- ✓ All the patients were kept fasting for 10 hours.
- ✓ The drug was given to the patients while blood letting for the Fasting blood sugar at the hospital. In here 5g of powdered drug was diluted in 100ml of water.
- ✓ The time of blood drawing and the drug intake was exactly same.
- ✓ After 10 minutes the Oral Glucose Tolerance Test (OGTT) was done to the every patient which describes as follows.
- ✓ In here every patient were given a 75g of glucose diluted with 100ml of water.
- ✓ After 30 minutes of time the blood sugar levels were checked in each and every patient.
- ✓ In there next visit they were checked by giving water as a oral administration.
- ✓ In this visit same instructions were given as before.
- ✓ In here all the patients were kept fasting for 10 hours.
- ✓ The water was given to the patients while blood drawing for the Fasting blood sugar at the hospital.
- ✓ The time of blood drawing and the Water intake was exactly same.
- ✓ After 10 minutes the Oral Glucose Tolerance Test (OGTT) was done to the every patient which describes as above.

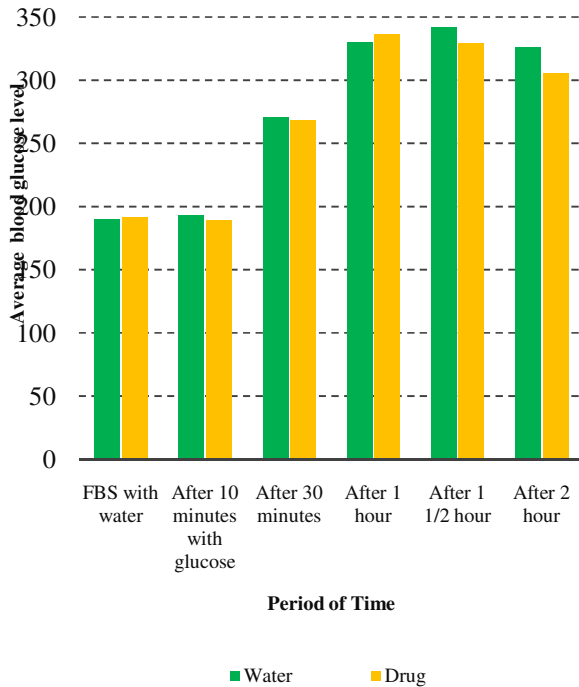
IV. Data and Data Analysis

Table 2: Average Glucose level after giving water and Drug by periods of time.

Period of Time	Average FBS level	
	Water	Drug
FBS	189.5	191.0
After 10 minutes with glucose	193.3	188.7
After 30 minutes	270.7	268.5
After 1 hour	330.3	336.5
After 1 1/2 hour	342.2	329.0
After 2 hour	326.5	305.0

This nature has been visually depicted in the Figure 1

Figure 1: Average FBS level after giving water and Drug by periods of time



A. Testing treatment efficacy

Since the sample size is small (10 patients) A Non-parametric test called Wilcoxon Sign Rank test was applied for statistical testing.

Table 3: Application of Wilcoxon Sign Rank test for testing treatment efficacy for each period of time

Period of Time	Wilcoxon Statistic	p - value
FBS	15.0	0.853
After 10 minutes with glucose	10.0	0.500
After 30 minutes	9.5	0.458
After 1 hour	8.0	0.606
After 1 1/2 hour	8.0	0.337
After 2 hour	7.0	0.265

V. Discussion

Diabetes mellitus is a disease which mostly associate with genes and life style. Though there are several therapeutic methods in several medical systems, the prevalence of this disease is increase day by day.

The drug used here was already given in the diabetic clinic of Provincial Ayurveda hospital -Pallekale. Patients diagnose as Type II diabetes mellitus were given this basically for the purpose of reduce Blood glucose level. According to that clinical experience, the drug shows good efficacy when using prolong time. So this study was implemented to evaluate the acute effect in it.

According to the table 1, comparing with the average glucose levels after giving the drug during the periods after 10 minutes, 30 minutes 1 1/2 hours and 2 hours has been lower than measurements taken after giving water. It was other way around during the remaining two periods. These results indicate a good outcome as compared to water for the declining amount of blood glucose.

Due to the sample size, the Non-parametric test called Wilcoxon Sign Rank test was applied for statistical testing. Since p-values are not less than 0.05, efficacy of the drug is not statistically significant at 5 percent significant level for all the periods of times.

In this case study, the study sample consist of 10 patients as it is the minimum number for the pilot study.

Therefore , the correct p-value may be not shown for this drug. And also the study was done at OPD level. Though the patients get a same instructions, there may be some issues in it practically.

In Madumeha the predominant vitiated doshas are Vata and kapha, And the ingredients of this drug has mainly Tiktha rasa with Ushnaveerya which nullify the Vata and Kapha.

They also act as Deepana,Pachana which improves the digestive fire ,so it directly act on the main factor in the pathology of Madhumeha.

According to these facts, though the ingredients of this drug have Mehahara properties, the study results not shown as much as we expected for the acute effect in it.

VI. Conclusion

While this medication is evidence-based for chronic diabetes treatment, there may be some concerns with its acute impact. Therefore to come to the perfect conclusion, the research

sample should be expanded and the setting of the study must be inward patients of the hospital.

Therefore here is an open field for new researchers to increase this study sample and repeat this procedure to have a perfect Conclusion.

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