

## TO STUDY THE EFFICACY OF DARVYADI KWATHA IN MADHUMEHA WITH SPECIAL REFERENCE TO DIABETES MELLITUS

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### ABSTRACT

*Madhumeha* is one of the types of *Vataja Prameha*<sup>1</sup> that has been considered as *Mahagada*. Due to the indulgence in etiological factors it results in the *aparipakva kapha*<sup>2</sup> and *meda* which further proceed downward through the *Mutravaha Srotas* and get localized at *Basti Mukha* and leading to the symptoms like *prabhoota mutrata*, *avila mutrata* etc. Diabetes Mellitus taken as the parallant disease for *madhumeha* is known from the dawn of civilization. Diabetes Mellitus is metabolic disorder in which carbohydrate, fat and protein *Ayurveda* has described that a rational treatment is one where the medicine modifies the disease; on the other hand it doesn't provoke new complaints. Due to all these things it has become a challenge for Ayurvedists to search for an additional safe and effective treatment. So I took *Darvyadi Kwatha* in *Madhumeha*. **Aim:** to study the efficacy of *darvyadi kwatha* in *madhumeha* with special reference to diabetes mellitus. **Materials and Methods:** This is a Single blind clinical study with pre-test and post-test design. 80 Patients who fulfilled the criteria of inclusion were taken for the study. Out of which, 40 patients were administered with *Darvyadi kwatha* and dose 40 ml were given twice daily after food, for duration of 90 days. Similarly 40 patients were given *Phalatrikadi kwatha* with dose 40 ml with *anupan madhu* **Result:** *Darvyadi Kwatha* is a effective in treatment of *Madhumeha* and definitely reduces the symptoms of the illness that include *Prabhoota Mootrata*, *Avila Mootrata*, *Pippasa*, *Karapadataala Supta/daha Dourbalya*, FBS, PPBS and Urine sugar HbA1C with statistical analysis **Conclusion-** It can be said that the present study shows significant remission in Signs and symptoms of illness *Madhumeha* vis-a-vis Diabetes Mellitus corroborated with definite reduction in blood sugar levels. Therefore it is imperative that the *Darvyadi kwatha* helps in management of the disease.

**Keywords:** *Madhumeha*, *Darvyadi Kwatha*, Diabetes Mellitus.

### INTRODUCTION

In present scenario, it has become really important for everyone to maintain a physical and mental balance. With so food alteration, untimely working hours and unhealthy life style, it has become mandatory for everyone to look after our health. Due to present life style of excess use of *guru, snigdha, amla, lavana ras, navanna, new wine, asyasukh, atinidra, avyayama, achinta* and abstaining from *sanshodhana*; large population leading towards the disease *Madhumeha*. In *ayurveda* a condition in which person passes honey like urine is called *madhumeha*. A medical condition in which body can't produce enough insulin to process the glucose in the blood is known as Diabetes. The word diabetes was first recorded in 1425 & 1675. The Greek word *mellitus* meaning like honey that reflects the sweet, smell & taste of patient's urine. Although the prevalence of Type I and Type II D. M. is increasing worldwide, the prevalence of Type II D.M. is expected to rise more rapidly in future because of increasing obesity and reduced physical activity. All the above factors inspired me to study the effect of *Darvyadi Kwath* in *Madhumeha* with special reference to Diabetes Mellitus.

### **AIMS & OBJECTIVES**

To study the efficacy of *darvyadi kwatha* in *madhumeha* with special reference to diabetes mellitus

### **MATERIALS AND METHODS**

This is a Single blind clinical study with pre-test and post-test design. 80 Patients who fulfilled the criteria of inclusion were taken for the study. Out of which, 40 patients were administered with *Darvyadi kwatha* and dose 40 ml were given twice

daily after food, for duration of 90 days. Similarly 40 patients were given *Phalatrikadi kwatha* with dose 40 ml with *anupan madhu* twice daily after food, for duration of 90 days. Each follow up was taken on day 0,30,60,90.

### **Design of the study:**

A Single blind controlled clinical trial study on 80 D.M. patients. In the present study *Darvyadi Kwatha* was given in study group. The results were compared with control group in which *Phalatrikadi kwatha*

### **Selection of Patients:**

Total no. of 80 patients between the age group of 30-65 years who have *Madhumeha Vyadhi* were selected by simple random sampling method irrespective of age, sex, religion and occupation. Patients presenting with *Pratyatma lakshanas<sup>1</sup> of Madhumeha (NIDDM)* such as *prabhuta mutra, avila mutra, mootra madurya*, with range FPG > 110 up to 200 mg/dl and PPG >160mg/dl Up to 400 mg/dl. But, as per modern biochemical definition of DM patients taken for FPG more than 126 mg/dl and PP more than 200 mg/dl.

**Age Group** – 30-65 years old male/female

### **Exclusion Criteria:**

1. IDDM patients
2. Gestational diabetes.
3. Diabetes Mellitus produced due to other illnesses like Acromegaly, Cushing's syndrome, pancreatic disorders etc.
4. Acute complications Diabetic Keto-acidosis & hyperglycemic hyperosmolar coma.
5. Pregnant & Lactating Mother.
6. History of severe unstable angina, MI, CVA, Renal failure.

Known DM from Genetic Defects (MODY).

### **Investigations:**

1. BLOOD: FBS, PPBS

2. URINE ANALYSIS: fasting and pp sugar.
3. GLYCOSYLATED Hb - (HbA1C)

*prakaran*). *Darvi, Triphala, suravha, Musta* taken each 5gms and water 360ml and decoction prepared 80ml .out of which 40ml in morning and evening after food is given

**Preparation of Drug:**

The drugs of *Darvyadi Kwatha* guidelines mentioned in *Sharangdhar Samhita (Kwatha*

**Table 1:**

Sr no.		Group A	Group B
1.	Drug	<i>Darvyadi Kwatha</i>	<i>Phalatrikadi kwatha</i>
2.	Route of administration	Oral	Oral
3.	Dose	40 ml(Fresh)	40 ml(Fresh)
4.	Kaal	<i>Vyan-udan</i>	<i>Vyan-udan</i>
5.	Anupan	-	<i>Madhu</i>
6.	Duration	3 months	3 months
7.	Follow-up	Every 30 <sup>th</sup> day	Every 30 <sup>th</sup> day

**CRITERIA FOR ASSESSMENT:**

The improvement in the patient was assessed mainly on the basis of relief in the signs and symptoms and the gradation of which is done on

the basis of severity. Reduction in Blood Sugar Level, urine sugar level, Glycosylated Hb was also documented.

**Table 2: ASSESSMENT INVESTIGATION:**

BLOOD	BT	AT1	AT2	AT3
FBS mg/dl				
PPBS mg/dl				
URINE	BT	AT1	AT2	AT3
FUS				
PPUS				
HbA1C				

**Table 3: SUGAR CRITERIA: FASTING BSL & PP BSL**

	Range	Grade in No.	Grade
FASTING BSL	70-110	0	Normal
	111-125	1	MILD
	126-180	2	Moderate
	>180	3	Severe
PP BSL	upto 140	0	Normal
	141-160	1	mild
	161-300	2	Modarate
	>300	3	Severe

**Table 4: URINE FASTING & PP**

Grade in sign	Grade
Absent	Normal
+,TRACE	Mild
++	Modarate
+++,>+++	Severe

**Table 5: CRITERIA FOR HBA1C**

percentage of HbA1C(HbA1C)	Clinical conditions
below 6.0 %	Normal
6.0-7.0 %	Good control
7.0-8.0 %	Fair control
8.0-10.0 %	Unsatisfactory control
Above 10 %	Poor control

**OBSERVATIONS AND RESULTS**

**STATISTICAL ANALYSIS (RESULTS):**

The effect of *Darvyadi Kwatha* and *Phalatrikadi Kwatha* was assessed in both the groups on the basis of criteria designed for assessment. The observations were recorded in case record form on day 0 and every 30<sup>th</sup> day. The results were drawn with appropriate statistical technique with Wilcoxon signed ranks Z test & paired t test. Follow-up was recorded after each one month for consecutive three months.

**OBSERVATION:**

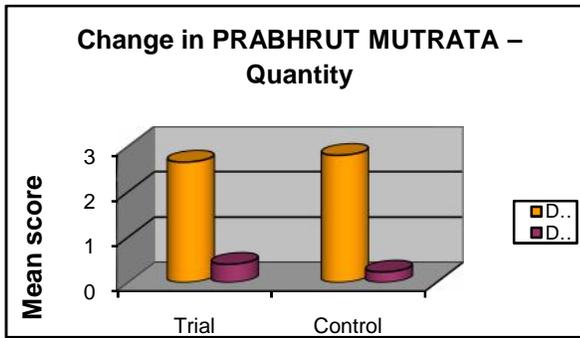
Out of 80 patients of *Madhumeha* studied in this study, the majority of the patients i.e. most of the patients were from elderly age group. That means plus 60 yrs old male (36.25%) and middle aged person in between 40-50 years were 30% In this study the disease pre-dominance is observed in male. It is about 72.50% and female were about 27.5%. In these study patients predominantly from Hindu religion about 95% were observed. Followed by christen were about 3.75% In this study

maximum patients were Farmers (40%) and House wives(26.25%).And Desk workers has also found in large numbers (16.25%). In this study, this table shows that maximum no. of patients were from *sadharan desh* 98.75%. In this study, I have observed that 85% peoples were taking mixed diet.10% persons were taking vegetarian food. Non-veg taker was 5%. All the patients had the *Dvandvaja Prakruti*. Maximum number of patients had *Madhyama Sara, Madhyama Samhanana*. 45% patients had *Teekshna agni*. 60% of the patients were *Krusha pramehi*.70% of the patients were not having any family history of *Madhumeha*.

**Results:**

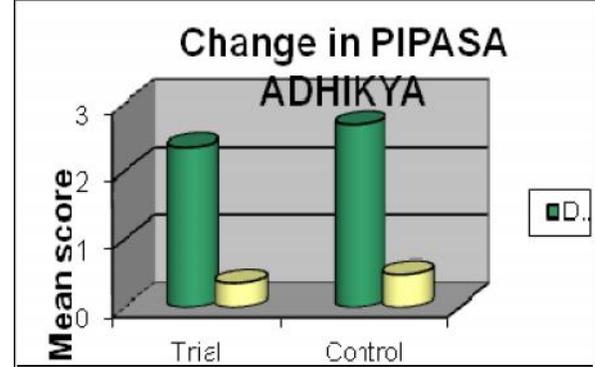
**1. Effect on Prabhoota Mootra on quantity:**

This shows that *Darvyadi kwatha & Phalatrikadi kwatha* has shown statistically highly significant improvement in *prabhuta mutrata lakshna* (p<0.001) in trial group and control group. Graphically and mean wise in each follow up there is reduction in symptom. At last on the 90th day control group shows significant result than trail group.



**2. Effect of Prabhoota mootra on frequency:**

In this table both trail group and control group show highly significant improvement in *prabhut mutrata lakshanas*- frequency ( $p < 0.001$ ). Meanwise during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 trial groups shows more significant result than control group.



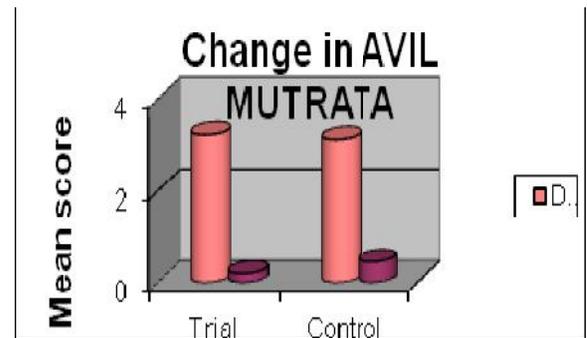
**4. Avil Mutrata :**

In this table both trail group and control group shows highly significant reduction in *avil mutrata lakshanas* ( $p < 0.001$ ). Meanwise and graphically during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 trial group shows more significant result than control group.

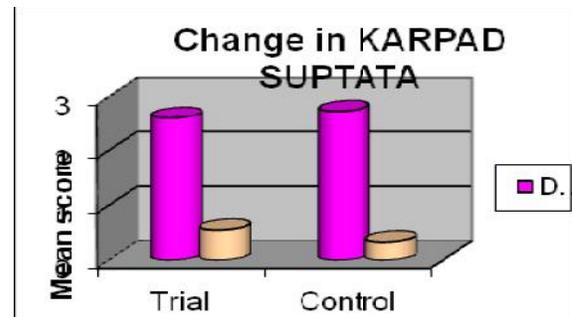
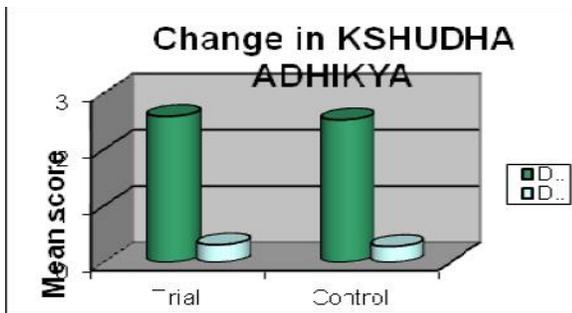


**3. Effect on Pipaasa:**

This table shows that both trail group and control group show highly significant improvement in *pipasa adhikeya lakshanas* ( $p < 0.001$ ). Meanwise and graphically during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 trial group shows more significant result than control group.



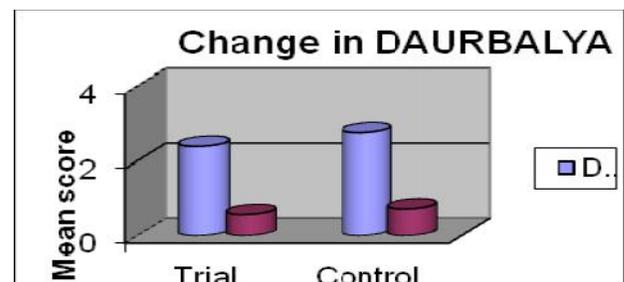
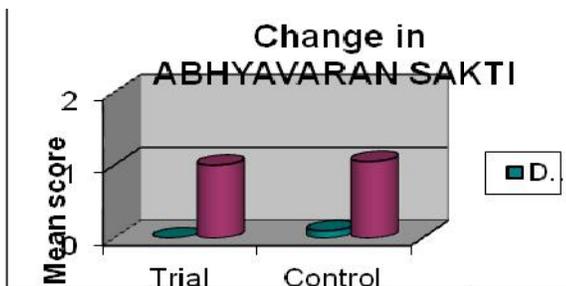
**5. Kshudha adhikeya:** In this table both trail group and control group shows highly significant reduction in *kshudha adhikeya lakshanas* ( $p < 0.001$ ). Meanwise and graphically during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 control group shows more significant result than trial group.



### 6. *Abhyavaran shakti:*

In this table both trail group and control group shows highly significant reduction in *abhyavaran shakti lakshanas* ( $p < 0.001$ ). Meanwise and graphically during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 trail group shows more significant result than control

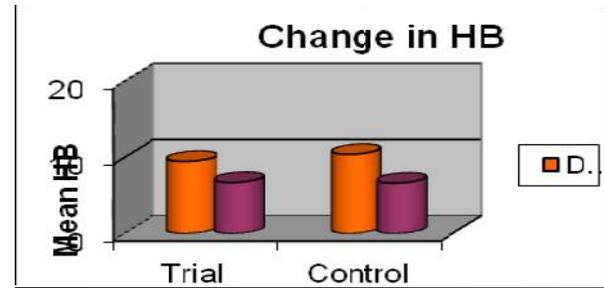
8. *Daurbalya:* In this table both trail group and control group show highly significant reduction in *daurbalya lakshanas* ( $p < 0.001$ ). Meanwise and graphically during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 trail group shows more significant result than control group.



### 7. *Karpad Suptata:*

In this table both trail group and control group show highly significant reduction in *karapada suptata lakshanas* ( $p < 0.001$ ). Meanwise and graphically during each follow up trail group shows significant effect in reduction of *lakshanas*. On day 90 control group shows more significant result than group.

9. **BSL – Fasting:** In this table both trail group and control group shows highly significant reduction in **BSL-Fasting** level ( $p < 0.001$ ). Such type of data we use paired t test used for comparison between two groups. Meanwise and graphically during each follow up trail group shows significant effect in reduction of BSL Fasting level. On day 90 **BSL-Fasting** levels in control group shows more significant result than trial group.



**10. BSL – Post Prandial:** In this table both trail group and control group show highly significant reduction in **BSL-PP** level ( $p < 0.001$ ). Such type of data we use paired t test used for comparison between two groups. Meanwise and graphically during each follow up trail group shows significant effect in reduction of BSL Fasting level. On day 90 **BSL-PP** level in trail group shows slightly more significant result than control group.



**11. Glycosylated Hb:**

In this table both trail group and control group show highly significant reduction in HbA1C (GLYCOSYLATED Hb) level ( $p < 0.001$ ). Such type of data we use paired t test used for comparison between two groups. Meanwise and graphically during each follow up trail group shows significant effect in reduction of HbA1C level. On day 90 **HbA1C** level in control group shows slightly more significant result than trail group.

**12. Urine sugar – Fasting:**

Initially in this qualitative data only 5 patients in trail group and 3 patients in control group having absent urine sugar. After treatment 37 pts in trail group and 40 pts in control group shows significant improvement

**13. Urine sugar – Post Prandial:**

Initially in this qualitative data only 0 patients in trail group and 0 patients in control group having absent urine sugar. After treatment 18 pts in trail group and 10 pts in control group shows significant improvement in reduction of urine pp level.

**CONCLUSION**

The maximum number of patients observed in this study is between the ages of 35-65 years. There is no relation of sex, marital status, religion for the causation of *Madhumeha*. Sedentary life style, increased stress and strain are main factors for the production of *Madhumeha*. The *Madhumeha* has been discussed in *Prameha roga* as one among the *Vataja Prameha*. And also the word *Madhumeha* is used as synonym to *Prameha*. The study confirms in the pathogenesis of the disease *Madhumeha* that there is a dominance of *kapha dosha, medo dushti, rasavaha and medovaha srotodushti*. The formulation taken for the study is helpful in both *Sthula* and *Krusha Pramehi* and comparatively effect was better in *Krusha*

*Pramehi* group. The study confirms that *Darvyadi Kwatha* is effective in treatment of *Madhumeha* and definitely reduces the symptoms of the illness that include *Prabhoota Mootrata, Avila Mootrata, Pippasa, Karapadataala Supta/daha Dourbalya, FBS, PPBS* and Urine sugar HbA1C and Most of the *Darvyadi kwatha* drugs have *Kashaya, Tikta rasa, Laghu, Rooksha Guna* and *Katu Vipaka*. These are said to be *Kaphaghna, Pramehaghna, Medoghna* and *Mootra sangrahaneeya*. *Tikta, Kashaya rasa, Laghu, Rooksha Guna* produces *rookshana* effect and they are having opposite qualities to that of *Kapha* and *Medas*, which are the main entity of the Pathogenesis of *Prameha*. *Bahu dravata* will be present in *Madhumeha*. *Tikta, Kashaya rasa* does the action of *Shoshana*. When *Bahu dravata* reduces then the *Pratyatma Lakshana* of *Madhumeha* like *Prabhoota Mootrata, Avila Mootrata* and *Pippasa* etc also reduces. The diminution in fasting blood sugar and post prandial blood sugar level is due to the hypoglycemic action of the *Darvyadi Kashaya* drugs like *Darvi, Devdara, Haritki, Amalaki, Bibhitaki, Musta* To sum up, it can be said that the present study shows significant remission in Signs and symptoms of illness *Madhumeha* vis-a-vis Diabetes Mellitus corroborated with definite reduction in blood sugar levels. Therefore, it is imperative that the *Darvyadi kwatha* helps in management of the disease.

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