

## THE ROLE OF SIMHAMRUTA GHRITA IN THE MANAGEMENT OF MADHUMEHA WITH SPECIAL REFERENCE TO NIDDM

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### ABSTRACT

**Introduction:** The international Diabetes Federation estimates that more than 250million people around the world have diabetes. India gains its position as a capital of diabetes in the world. Every 10 seconds two people develop diabetes. *Ayurveda* relates *madhumeha* with diabetes mellitus. Now days, *madhumeha* (Diabetes Mellitus) has become a favorite subject for the researchers of various medical fields. The disease *prameha* is generally concerned with urinary abnormalities and from the ayurvedic point of view it is a disease of “*Mutravaha & Medoaha Strotas*”. As per ayurveda if all types of *prameha* left untreated lead to Madhumeha which is a type of *Vataj Prameha (Ojomeha)* which is *asadhya – yapy*. **Aim & Objectives:** To see the role of *simhamruta ghrita* in the management of *madhumeha* with special reference to NIDDM. **Methodology:** the study is based on *ayurvedic samhitas* and modern texts and different websites related with diabetes. **Discussion:** Diabetes has its poor socioeconomic impact on human beings. The continuously changing life style i.e. lack of exercise, excessive day sleeping or late night sleeping and eating junk food instead of nutritious and fiber rich food and stressful job works are the responsible factors for incidence of lifestyle disorders like diabetes. **Conclusion:** *Simhamruta Ghrita* is found significantly effective in relieving the symptoms of *madhumeha* in symptom wise statistical analysis but the onset of action of Metformin is quick earlier than *Simhamruta Ghrita*.

**Keywords:** Diabetes mellitus, *Madhumeha*, lifestyle disorders, *Simhamruta ghrita*

## INTRODUCTION

In recent days or years, India has managed the series of communicable diseases but the nation has to now deal with a breed of life style disorders like Diabetes mellitus. *Madhumeha*, disease entity where the patient passes urine that is sweet, astringent and white pale in color<sup>1,2</sup>. From observation of these qualities of urine, clinical features and etiological factors, pathogenesis, Diabetes mellitus is correlated with *Madhumeha*. In addition to the consequences of abnormal metabolism of glucose (e.g. hyperlipidemia, glycosylation of proteins etc) there are no. Of long-term complications associated with the disease. These include cardiovascular, peripheral, ocular, neurological and renal abnormalities, which are responsible for morbidity, disabilities and premature death in young adults<sup>4,6,9</sup>.

*Madhumeha* is included in *ashtoumahagada* and the reference is found in chapter 33<sup>rd</sup> of sutrasthana '*AvarniyaAdhyayam* of *sushrutasamhita*. The incurable stage of *prameha* is termed as *madhmeha*. It is nothing but the kind of *vataj prameha* characterized by excretion of urine which resembles honey like sweet taste and frequency of micturition<sup>3</sup>.

### Aim:

1. To see the role of *Simhamruta Ghrita* in the management of *madhumeha* with special reference to NIDDM.

### 2. Objectives:

#### Primary Objectives (Literary study):

1. To study *nidanpanchaka*, types and *updravas* of *Madhumeha* from ayurvedic classics.
2. To study etiology, types and pathogenesis of Diabetes mellitus from modern texts.
3. To study the *chikitsa upakramas* explained in *Ayurveda* and line of treatment according to modern science.
4. To study mode of action of *Simhamruta Ghrita* on the text basis.

#### Primary objectives (Clinical study) :

1. To study the efficacy of *Simhamruta Ghrita* in *Madhumeha*.
2. To study the efficacy of Tab. Metformin in *madhumeha*.

3. To study mode of action of *Simhamruta Ghrita* on the clinical basis.

### Material & Methods:

**PREPARATION OF DRUG:** *Simhamruta Ghrita* is described by Bhavaprakasha.

The contents are given as<sup>6</sup>:

- |                               |   |                                  |
|-------------------------------|---|----------------------------------|
| 1. <i>Kantakari</i> -         |   | <i>solanum Zanthocarpum</i>      |
| 2. <i>Guduchi</i>             | - | <i>tinospora Cordifolia</i>      |
| 3. <i>Shunthi</i>             | - | <i>zingiber officinale</i>       |
| 4. <i>Maricha</i>             | - | <i>piper Nigrum</i>              |
| 5. <i>Pippali</i> -           |   | <i>piper Longum</i>              |
| 6. <i>Amalaki</i>             | - | <i>emblica Officinale</i>        |
| 7. <i>Bibhitaki</i> -         |   | <i>terminalia Belerica</i>       |
| 8. <i>Haritaki</i>            | - | <i>terminalia Chebula</i>        |
| 9. <i>Rasna</i> -             |   | <i>pluchea Lanceolata</i>        |
| 10. <i>Vidanga</i>            |   | <i>embelia Ribes</i>             |
| 11. <i>Chitrak</i>            | - | <i>plumbago Zeylanica</i>        |
| 12. <i>Kashmarya</i> -        |   | <i>gmelina Arborea</i>           |
| 13. <i>Putik (Karanja )</i> - |   | <i>pongamia Pinnata</i>          |
| 14. <i>Kutaj</i> -            |   | <i>hollarhena Antidysentrica</i> |

### Drug Manufacturing –

The drugs (raw) *Kantakari* & *Guduchi* one hundred *pala* (4 kg) were pounded in mortar & pestle and then boiled in 4 *drona* (40.96 liter) of water, decoction reduced to ¼. To this were added one *prastha* (640 gms) of *Ghrita* & paste of *Trikatu*, *Triphala*, *rasna*, *vidanga*, *Chitraka*, root of *Kashmarya*, bark of *karanja* & *kalinga* 12 gm each.

### GROUPING & RANDOMIZATION OF PATIENT (clinical study)

The study of *Madhumeha* was carried out in OPD / IPD of *Kayachikitsa* department. 60 patients of *Madhumeha* were randomly selected and divided in two groups.

Trial Group - 30

Control Group - 30

Patients were diagnosed on the basis of clinical signs & symptoms described in ayurvedic texts & modern medicine.

The two groups of study are

**Group A - Trial Group**

Drug - *Simhamruta Ghrita*

Dose - 1 *Aksha* (10-12 gm)

*Anupana* - Milk & cooked rice (purana)

Follow up - 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> week (1 month) and other with gap of 15 days for next 1 months.

**Group B - Control Group**

Drug - Tab. Metformin Hydrochloride after meal

Dose - 500 mg BD

Follow up - 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> week (1 month) and other with gap of 15 days for next 1 months.

**Observation & criteria for gradation of Disease:**

**1. PrabhutMutrata (Polyurea) :-**

Frequency / Day	Frequency / night	Grade
1 – 4	1 – 2	0
5 – 7	3 – 4	1
8 – 10	5 – 6	2
10- 12	7 – 8	3
> 12	>8	4

**2. Aavilmutrata (turbidity of urine)**

<i>AavilMutrata</i>	Grade
Absent	0
Present	+

**3. Panipadayodaha (burning sensation in soles and palms)**

<i>Panipadayodaha</i>	Grade
No burning	0
Occasional	1
Intermittent	2

**4. Trut (Polydipsia)**

Frequency / Day	Frequency / Night	Volume	Grade
1 – 4	----	<2	0
5 – 7	2 – 3	2 – 2.5	1
8 – 10	4 – 5	2.5 – 3	2
10 – 12	6 – 8	3.5 – 4	3
>12	>8	> 4.5	4

**5. Shlathangatwam (weakness)**

<i>Shlathangatwam (Weakness / fatigue)</i>	Grade
After 2 km walk	0
After 1 km	1
After ½ km	2
After routine work	3
During routine work	4

**6. Polyphagia (trut)**

Meals / Day	Extra	Qty.(roti)	Grade
3	0	5 – 6	0
3	1	7 – 8	1
3	2	9 – 10	2
3	3	11 – 12	3
3	> 3	> 12	4

**7. Swaduasayata (Sweet Taste in Mouth)**

Absent	0
Present	+

**8. Laboratory Investigations:**

Urine Sugar	Score
Nil	0
Trace	1
0.5	2
1.0	3
1.5	4
2.0 gm	5

**9. Criteria for final assessment**

Complete relief	100%
Marked improvement	> = 75%
Moderate relief	> = 50%
Mild relief	> = 25%
No improvement	< 25

A composite score of above subjective parameters will be done.

**Objectives:**

Laboratory Investigations –

**1) Blood Sugar level:**

Fasting: 70-130mg/dl

Post – Prandia: 200 – 270mg/dl

**2) Urine Sugar level:**

Fasting

Post – Prandial

Investigations were done before & after the treatment.

**10. Comparison between Group A and Group B.**

	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value
<i>PRABHUTMUTRATA</i>	Group A	30	25.87	776.00	311.000	0.024
	Group B	30	35.13	1054.00		
	Total	60				
<i>AAVILMUTRATA</i>	Group A	30	28.60	858.00	393.000	0.031
	Group B	30	32.40	972.00		
	Total	60				
<i>PANIPADAYO DAHA</i>	Group A	30	30.35	910.50	445.500	0.045
	Group B	30	34.65	919.50		
	Total	60				
<i>TRUT</i>	Group A	30	29.62	888.50	423.500	0.042

	Group B	30	35.38	941.50		
	Total	60				
<i>SWADUASYATA</i>	Group A	30	29.53	886.00	421.000	0.032
	Group B	30	33.47	944.00		
	Total	60				
<i>SHLATHNGATWAM</i>	Group A	30	27.47	824.00	359.000	0.031
	Group B	30	34.53	1006.00		
	Total	60				
<i>KSHUDHADHIKYA</i>	Group A	30	27.58	827.50	362.500	0.038
	Group B	30	35.42	1002.50		
	Total	60				

For comparison between Group A and Group B, we have used Mann Whitney U test. From above table we can observe that P-Values for all parameters are less than 0.05 hence we conclude that there is significant

difference between Group A and Group B. Further we can observe that mean rank for Group B is greater than Group A hence we conclude that effect observed in Group B is more than Group A.

### 11. Comparison between Group A and Group B

	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value
Urine Sugar F	Group A	30	25.45	763.50	298.500	0.040
	Group B	30	35.55	1066.50		
	Total	60				
Urine Sugar PP	Group A	30	26.80	804.00	339.000	0.031
	Group B	30	34.20	1026.00		
	Total	60				

For comparison between Group A and Group B, we have used Mann Whitney U test. From above table we can observe that P-Values are less than 0.05 hence we conclude that there is significant difference between

Group A and Group B. Further we can observe that mean rank for Group B is more than Group A hence we can conclude that effect observed in Group B is more than Group A.

**12. BSL**

BSL (F)		Mean	N	SD	SE	t-Value	P-Value	Result
Group A	Before	152.5	30	10.9	2.0	4.633	0.000	Sig
	After	132.7	30	23.4	4.3			
Group B	Before	157.3	30	14.0	2.6	10.398	0.000	Sig
	After	124.1	30	18.8	3.4			
BSL (PP)		Mean	N	SD	SE	t-Value	P-Value	Result
Group A	Before	221.0	30	19.3	3.5	7.114	0.000	Sig
	After	166.1	30	36.2	6.6			
Group B	Before	225.6	30	24.4	4.5	12.617	0.000	Sig
	After	150.2	30	27.8	5.1			

Since observations are quantitative, we have used paired t-test to test efficacy in Group A and Group B. From above table we can observe that P-

Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both Groups are significant.

**13. OVERALL ASSESSMENT:**

Overall Effect	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
Marked Improvement	1	3.3	1	3.3
Moderate Improvement	7	23.3	12	40.0
Mild Improvement	20	66.7	16	53.3
No Change	2	6.7	1	3.3

**DISCUSSION**

Diabetes has its poor socioeconomic impact on human beings. The continuously changing life style i.e. lack of exercise, excessive day sleeping or late night sleeping and eating junk food instead of nutritious and fiber rich food and stressful job works are the responsible factors for incidence of lifestyle disorders like diabetes<sup>7</sup>. Though it is a *tridoshakopa nimittaj vyadhi* it primarily involves *vata* and *kaphadosha*. *Vata* may be aggravated either due to *dhatukshaya* or by *avarana of kapha* or *pitta* to it. The initial

*dushya* involved in the pathogenesis are *meda* and *kleda*, *strotasa* affected are *mutravaha* and *medovahastrotasa*.

*Charakacharya* has classified *madhumeha* into *Apatarpanjanya* and *Santarpanjanya* while *vagbhata* has categorized *madhumeha* into *Dhatukshaya nimittaja* and *Avaranjanya madhumeha*. *Apatarpanjanya* and *Santarpanjanya madhumeha* can be correlated with *Dhatukshaya nimittaja* and *Avaranjanya madhumeha* respectively. The *Dhatukshayanimittamadhumeha* is considered *asadhya* (incurable) but

the *Avaranajanya Madhumeha* has been told as *krucchasadhya* (difficult to cure). *Simhamruta Ghrita* contains 14 drugs all of which possess *tikta, kashaya rasa, and triphala, trikatu* having *malanissaraka* and *agnivardhana* properties and alleviates vitiated *tridosha* simultaneously.

## CONCLUSION

*Simhamruta Ghrita* is found significantly effective in relieving the symptoms of *madhumeha* in symptom wise statistical analysis but the onset of action of Metformin is quick earlier than *Simhamruta Ghrita*. No adverse effect was seen during the study with *Simhamruta Ghrita*. Metformin is more effective in treatment of *Madhumeha* than *Simhamruta Ghrita*.

Along with medicines restricted diet, exercise, better lifestyle modifications (*satmy aahar vihar, pathya*) are also important in the management of *madhumeha*. In overall analytical study it is observed that Tab. Metformin hydrochloride is better than *Simhamruta Ghrita* in the management of *madhumeha*.

Therefore, it is concluded that *Simhamruta Ghrita* might be useful with other known anti-diabetic drugs as an adjuvant therapy to prevent secondary resistance to disease.

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