

CLINICAL EVALUATION OF RAJATA BHASMA AND ITS HIPOGLYCEMIC EFFECT ON MADHUMEHA

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ABSTRACT

Introduction: This study is conducted to evaluate hypoglycemic effect of *Rajata bhasma* in *madhumeha* (Diabetes mellitus). **Methods:** A single blind clinical trial was conducted at department of Taranath Govt, Ayurvedic Medical College Bellary. 30 patients were selected and *rajata bhasma* was administered in a dose of 65mg twice a day with *triphala kwath* as *anupana* (120ml). Treatment was given for 21 days and results (subjective and objective parameters) were analyzed before and after treatment. In subjective parameters *prabhootamutrata*, *Trish-nadhikya*, *paadadaha*, *Dourbalyata*, *Swedadhikyata*, *Bhrama* etc. Whereas F.B.S level, P.P.B.S level and FUS, PPUS level considered as objective. **Results:** It was observed that both subjective and objective parameters analyzed statistically showed the significant results with reduced F.B.S level at (P<0.001) and comparatively less significant in P.P.B.S level at (P<0.1) of blood sugar, FUS and PPUS level were reduced significantly at (p<0.01) and (P<0.001) respectively along with reduction in subjective parameters at (P<0.001). **Conclusion:** *Rajata Bhasma* prepared as per the textual standards is effective in *Madhumeha* and showing a way out to the individual suffering from this chronic disease. The study confirmed the effect of *Rajata bhasma* in *madhumeha*.

Keywords: *Rajata bhasma*, *Madhumeha*, Diabetes mellitus.

INTRODUCTION

Diseases are like curse to healthy life and manifest themselves as a hindrance in leading a happy and prosperous living. Day to day stress work and at home adds to the hostile environment against good health. In this pursuit, it has always been felt useful to explore the *Ayurvedic* resources to prevent and control the diseases like diabetes.

Recent WHO report revealed that in 1998, 135 million adults were diabetic worldwide and the figure is projected to reach 300 million by 2020. 20% of current diabetic population resides in South East Asia, with many of them being unaware of their general body sugar levels. Parental administration of insulin has not been accepted up to the required extent both by the patients and by the doctors. Oral hypoglycemic agents have many untoward effects, so there has been a keen desire to find out safer oral hypoglycemic agents. In *Charaka Samhita* it has emphasized that one etiological factor may produce different disorders or same etiological factor may produce only one disease, similarly multiple etiological factors may be involved in causation of one or many diseases.¹ Hence one pacifier measure is useful in many disorders or in single disorder, likewise many measures are required for a single disorder as well as multiple ones.² The inventory of *Ayurveda* provides various medications in different dosage forms to act as pacifier in *Madhumeha*. Hence an attempt has been made to study the effect of *Rajata Bhasma* with *Triphala Kashaya* in *Madhume-*

ha, which have been reported to possess hypoglycemic property on the basis of clinical study. *Rajata* is having *amla, Kashaya, Madhura Rasa, Guru, Snigdha, Mruduguna, Sheetavirya, Madhuravipaka, Vatapittashamaka, Vatakapha* Pacifier and *Lekhana, Deepana, Balya, Rasayana, Ayushya, Vrushya, Medhya, Rechana, Saraka* and best *Vayasthapaka, DimbAGRanThiuttejaka, Ruchya, Vishanashaka*³.

Aim and Objectives: -

To study the clinical efficacy of *RajataBhasma* with *Triphalakwatha* as *anupana* in selected 30 cases of *Madhumeha* with special reference to its Hypoglycemic effect.

Plan of Study: -

Selection of Patients: -

30 patients were selected randomly from outpatient department and in-patient department of Taranath Govt, Ayurvedic medical college and hospital Bellary.

Inclusion Criteria: -

Patients with classical signs and symptoms of *Madhumeha* (NIDDM) with chronicity upto 10 years. Only mild and moderate maturity onset NIDDM patients were selected, patients who fall in age group of 30-60 years were selected.

Exclusion Criteria: -

IDDM, *Madhumeha* with severe Maturity onset (NIDDM), *Madhumeha* with *updravas* like *pidika, Madhumeha* with ischemic heart disease, Neuropathy, Nephropathy etc.

Gradings Used In Clinical Study; -

Table 1: Subjective parameters were graded as 0,1,2,3

Sl.No	Symptoms	Score	Frequency
1	<i>Prabhootamutrata</i>	0	0-5 times
		1	6-9 times
		2	10-14 times
		3	more than 15 times
2	<i>Kshudhadhikyata</i>	0	Normal
		1	3-4 times
		2	5-7 times
		3	>7 times
3	<i>Trishnadhikya</i>	0	Normal
		1	5-10 times water
		2	10-15 times water
		3	>7 times

4	<i>Paadadha</i>	0	No
		1	Occasionally
		2	Often
		3	Disturbing working condition
5	<i>Dourbalya</i>	0	No
		1	Occasionally
		2	Often
		3	Disturbing working condition
6	<i>Kandu</i>	0	No
		1	Occasionally
		2	Often
		3	Disturbing working condition
7	<i>Swedadhikya</i>	0	No
		1	Occasionally
		2	Often
		3	Disturbing working condition
8	<i>Bhrama</i>	0	No
		1	Occasionally
		2	Often
		3	Disturbing working condition
9	<i>Avilamutrata</i>	0	Crystal clear
		1	Faintly cloudy
		2	Turbidity clearly present but newsprint can be read
		3	More turbidity and newsprint can't be read
10	<i>Madhuramutrata</i>	0	SUGAR (mg/dl)
		1	FBS PPBS
		2	<126 <200
		3	126-150 201-225
			151-175 226-250
		176-200 251-275	

Parameters for Assessment Criteria: -

Subjective Parameters: -

Prabhutamutrata, Kshudhadhikyata, Trishnadhikyata, Paadadaha, Dourbalya, Kandu, Swedadhikyata, Bhrama, Avilamutrata, Mahuramutrata.

Objective Parameters: - FBS, PPBS, FUS, PPUS.

Patients And Methodology: - 30 selected patients were administered with *RajataBhasma*. 65mg twice in day for 21days *Triphalakhwatha* as *anupana* (120ml).

Route of Administration: - Oral administration in the form of capsules.

Pathya And Apathya: - Advised to take sugar free, less fat and oils limited during study period.

OBSERVATIONS

It was observed that 46-50 age group (30%) followed by 41-45 (23.33%) and less number of 36-40,56-60 age were (13.33%), 30-35, 51-55 age were (10%) .Males were 60% and females 40%, job holders and office worker (36.67%), house wives (33.33%) business man were 30%, Majority were higher middle class were 63.34% followed by middle class 20% and poor 16.66%.*vata pitta prakruti* people were suffered more with 46.67% *Kapha pitta* 43.33% and *vatakapha* 10%, and 56.66% cases having family history, also 93.34% patients were having 0-5 years of chronicity and 5-10 years chronicity were 6.66%.

Graph 1: Showing Age Incidence

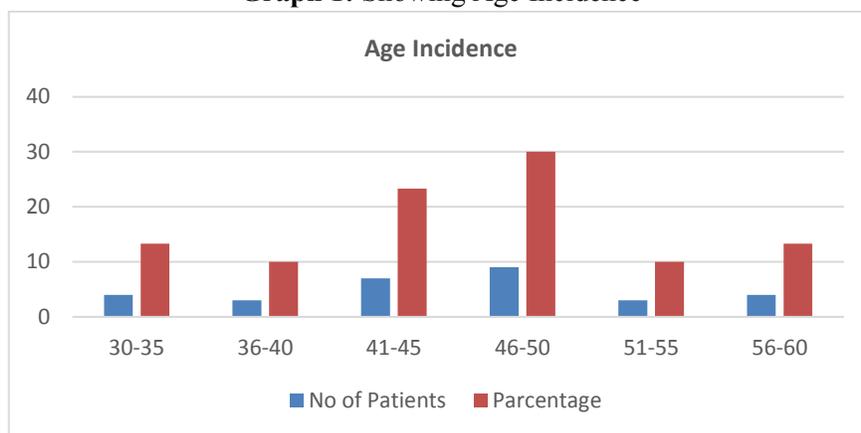


Table 2: Showing Age Incidence

SL No	Age Group	No of Patients	Percentage of Age
1	30-35	4	13.33
2	36-40	3	10
3	41-45	7	23.33
4	46-50	9	30
5	51-55	3	10
6	56-60	4	13.33

Graph 2: Showing Sex Incidence

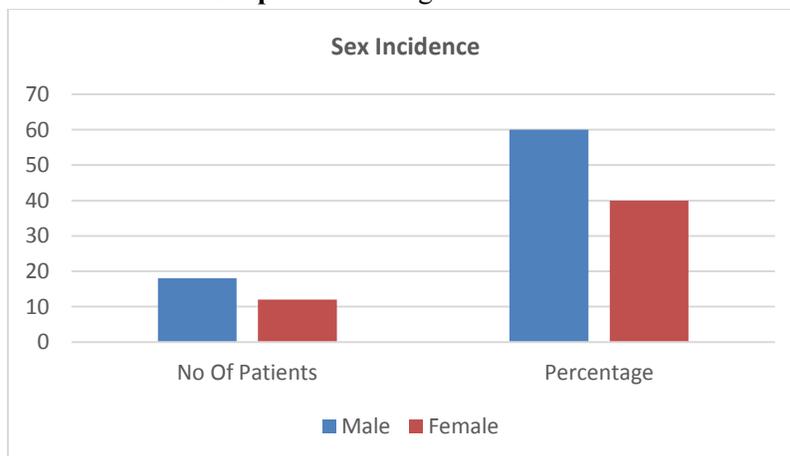


Table 3: Showing Sex Incidence

SL No	Sex	No of Patients	Percentage of Sex
1	Male	18	60
2	Female	12	40

Graph 3: Showing Occupational Incidence

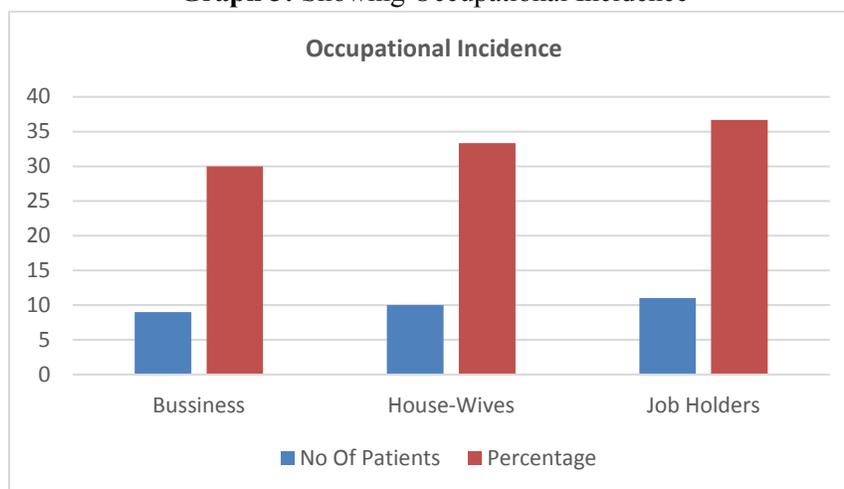


Table 4: Showing Occupational Incidence

SL No	Occupation	No of Patients	Percentage of Occupation
1	Business	9	30
2	Housewives	10	33.33
3	Job Holders	11	36.67

Graph 4: Showing Socio Economic Status Incidence

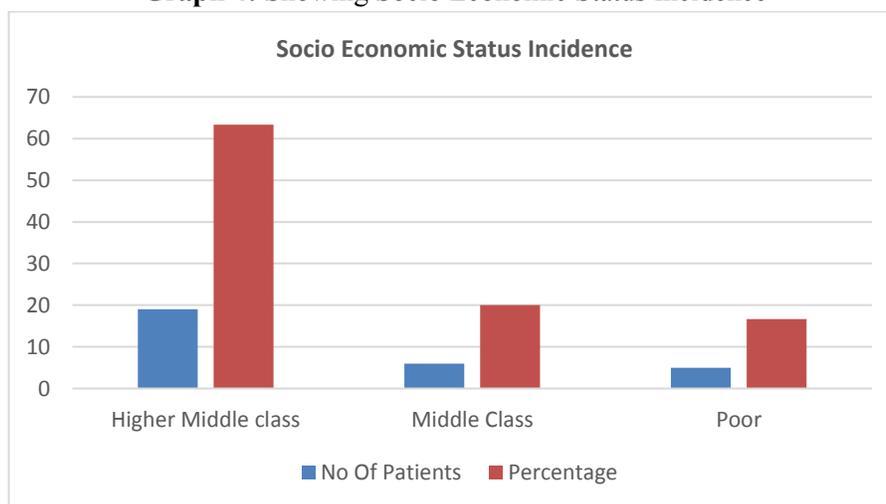


Table 5: Showing Socio Economic Status Incidence

SL No	Socio Economic Status	No of Patients	Percentage of Socio-Economic Status
1	Higher Middle Class	19	63.63
2	Middle Class	6	20
3	Poor	5	16.66

Graph 5: Showing Prakruti Incidence

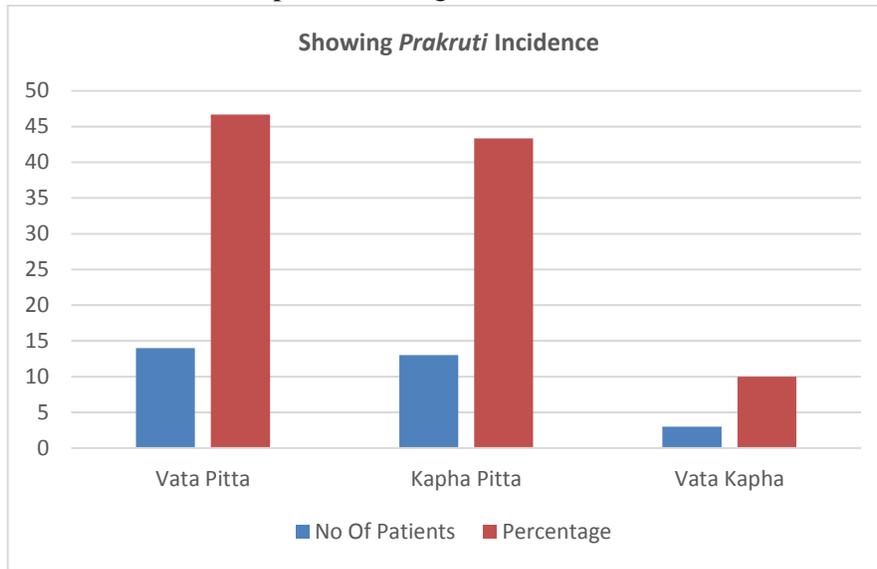


Table 6: Showing Prakruti Incidence

SL No	Showing Prakruti Incidence	No of Patients	Percentage of Prakruti
1	Vata Pitta	14	46.67
2	Kapha Pitta	13	43.33
3	VataKapha	3	10

Graph 6: Showing Family History Incidence

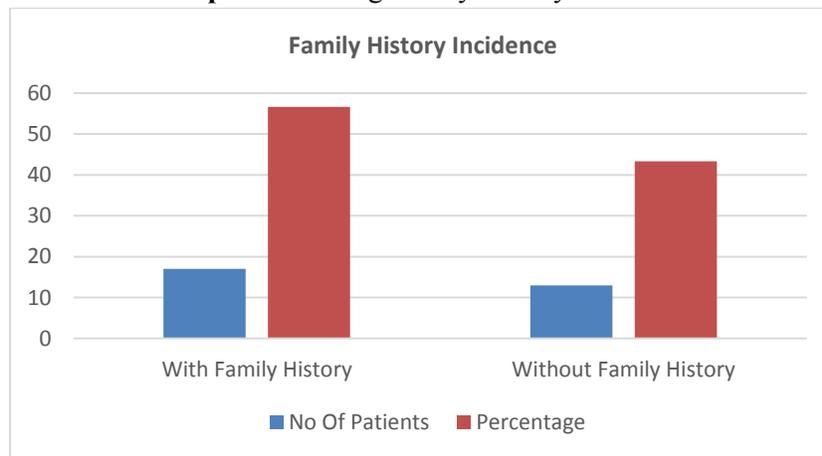


Table 7: Showing Family History Incidence

SL No	Showing Family History Incidence	No of Patients	Percentage of Family History
1	With Family History	17	56.66
2	Without Family History	13	43.34

Graph 7: Showing Duration Incidence

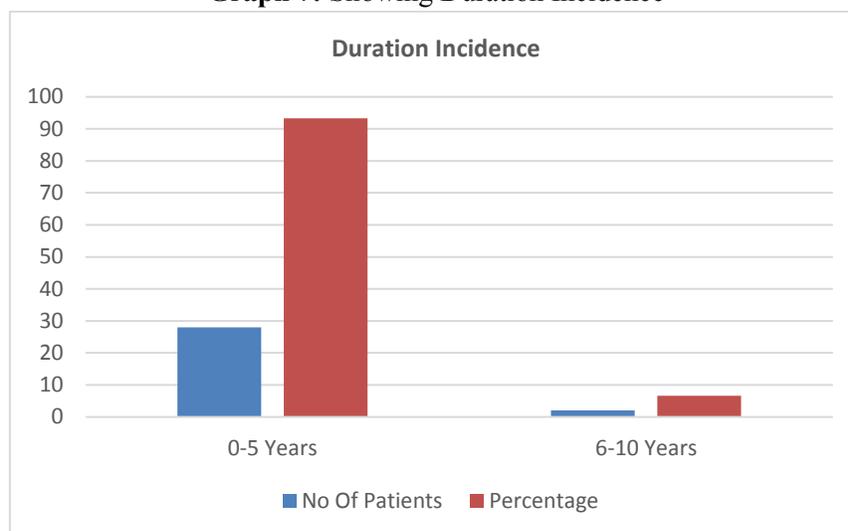


Table 8: Showing Duration Incidence

SL No	Showing Duration Incidence	No of Patients	Percentage of Duration
1	0-5 Years	28	93.34
2	6-10Years	2	6.66

Objective Parameters: - FBS, PPBS, FUS, PPUS

Table 9: Results: -

Bt- At	Sd	Se	T ₂₉	P	Results
7.3	16.4	2.99	3.14	<0.01	Significant
9.53	30.02	5.48	1.73	<0.10	Significant
0.15	0.270	0.0492	3.04	<0.01	Significant
0.44	0.428	0.0781	5.63	<0.001	Significant

The mean differences before and after treatment for group of 30 patients are: -
 FBS - 7.3 at level of p<0.01 of significance (Highly Significant).

PPBS -9.53 at level of p<0.10 of significance.
 FUS-0.15 at level of p<0.01 of significance.
 PPUS-0.44 at level p<0.001 of significance (Highly Significant).

Table 10: Subjective Parameters: -

Symptoms	Bt-At	Sd	Se	T ₂₉	P	Results
Prabhootamutrata	1.76	1.875	0.342	5.14	<0.001	Highly significant
Kshudhadhikyata	1.73	1.87	0.34	5.24	<0.001	Highly significant
Trishnadhikyata	1.8	1.96	0.357	5.04	<0.001	Highly significant
Paadadaha	0.9	1.098	0.200	4.5	<0.001	Highly significant
Dourbalyata	0.8	1.082	0.1976	4.04	<0.001	Highly significant
Kandu	0.4	0.694	0.1268	3.15	<0.001	Highly significant
Swedadhikyata	0.56	0.89	0.162	3.45	<0.001	Highly significant
Bhrama	0.43	0.669	0.1222	3.52	<0.001	Highly significant
Avilamutrata	1.73	1.856	0.339	5.1	<0.001	Highly significant
Madhuramautrata	1.33	1.438	0.262	5.07	<0.001	Highly significant

Table 11: The mean difference before and after treatment are:-

<i>Prabhutamutrata</i>	1.76
<i>Kshudhadikyata</i>	1.73
<i>Trishnadhikyata</i>	1.8
<i>Paadadaha</i>	0.9
<i>Dourbalya</i>	0.8
<i>Kandu</i>	0.4
<i>Swedhadhikyata</i>	0.56
<i>Bhrama</i>	0.43
<i>Avilamutrata</i>	1.73
<i>Madhuramutrata</i>	1.33

All the subjective parameters are highly significant at level of $p < 0.001$.

DISCUSSION

Rajata Bhasma is expected to act on *Vatavahasrotas* and in particular it may act on *Medovahasrotas* because of *saraguna*, *kashayarasa*, *lekhana*, *rasayana* property. *Rajata bhasma* is said to have *vatapitanashaka* and *vatanashaka* property which may be effective in *Vataja* variety of *prameha* and as *RajataBhasma* mainly acting on *vatavahasrotas*. Thus *Rajata Bhasma* may influence on the functions of pancreas. In present study *Triphalalkwatha* was selected as *anupana*. *Triphalalkwatha* might have helped in enhancing the bioavailability of *Rajata Bhasma*. The individual drugs of *Triphala* having *pramehahara* property. *Amalaki* one of the contents in *Triphala* have been proved as antidiabetic, antioxidant. In total *Rajata Bhasma* may be helpful in *Madhumeha* along with *Triphala*, because of its antioxidants *rasayana* and catalyst property. *Ayurvedic* pharmacology depends on five principles of *Rasa- Guna- virya- vipaka* and *prabhava*⁴. *Acharya Charaka* has mentioned that any *dravya* can have similar *rasa*, *virya* and *vipaka* but a different mode of action which can be explained on the basis of *prabhava*⁵.

In *Ayurvedic* classics, *Kapha* and *vata* play important role in the pathogenesis of *Madhumeha*, in *Shusrutha Samhita* while describing the principle of management of *Madhumeha* it has been mentioned that the drugs which are *Tikta*, *Katu*, and *Kashaya* in taste, *Sara* in

property with *KatuVipaka* and *Ushnavirya* with *Shoshaka* and *Chedana* actions should be selected for the treatment of *Madhemeha*⁶.

CONCLUSION

Rajata Bhasma along with *Triphala Kwatha* as *anupana* and controlled diet showed significant, in reducing FBS level and comparatively less significant in reducing PPBS level of blood sugar, along with reduction in subjective symptoms like *prabhootamutrata*, *Trishnadhikyata*, *kshudhadhikyata*, *Paadadaha*, *Dourbalayata*, *Swedadhikyata*, *Bhrama*, *avilamutrata*, *madahuramutrata*, *kandu*.

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