



## Effect of kushmandachurna (Benincasahispida Powder) in Prameha W.S.R. Type 2 Diabetes Mellitus

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### ABSTRACT:-

**Background:** Diabetes mellitus refers to group of common metabolic disorders that share the phenotype of hyperglycemia. In simple word, elevated sugar level in human body than normal. Around 347 million of total world population is diabetic and in 2012, 1.5 million deaths happened due to diabetes. In Ayurveda, Prameha (Diabetes) mentioned in Charaka Samhita, Sushrutasanhitā, Madhavanidana, Vagbhata by Acharyas. In which disease; frequency and quantity of urine more called Prameha. It can be correlated with Diabetes due to common symptoms like Bahumutrata (Polyurea), Trishna (Polydipsia) Mutaavilata (Turbid Urine) Sweda (Swating) Kshudhadhikya (Increased Appetite). The clinical features of Diabetes may present acutely, with the three classic symptoms of thirst, polyuria and weight loss; even so, clinical recognition may be delayed until the patient is seriously ill. Kushmanda Churna is selected for their wide spectrum action on Prameha like Tridosahara (Balanced Tridosha) Anulomaka, Bastishodhaka, Balya

**Aim:** To evaluate the effect of Kushmanda Churna in the treatment of Prameha.

**Materials and Methods:** Total 20 patients of Prameha w.s.r. Type 2 DM with 4 weeks duration were enrolled and randomly allocated to Group A (Oral Kushmanda Churna 6gm with Anupan Natural Honey 12gm daily twice), Group B (Oral Kushmanda Churna 6gm with Anupan Ushnodaka daily twice). Duration of treatment was considered about 1 month. Blood sugar level, Urine sugar level, Nocturia (Urination during night), Turbid urine (Mutaavilata), observed at weekly interval.

**Results:** With the treatment of 4 weeks, Group A showed dramatic improvements in signs and symptoms. Resolution of Bahumutrata, Mutaavilata, Urine sugar post prandial occurred in about 80% of patients. Whereas 70% of patients having reduction in Blood sugar fasting, blood sugar post prandial and urine sugar fasting. In patients of Group B, Blood sugar fasting and post prandial shows good results in 50%. Cessation of Bahumutrata, Urine sugar fasting & post prandial occurred in 60%, whereas Mutaavilata reduced in 70%. So use of Kushmandachurna with anupana as Natural honey or Ushnodaka shows significant effect. But when compared before and after treatment by applying 't' test to parameters,  $p > 0.001$  hence difference is not significant. Any treatment can use for Prameha

**Conclusion:** Kushmandachurna with natural honey or kushmandachurna with ushnodaka as anupana is useful for Prameha.

**Key words:** Prameha, Type 2 Diabetes Mellitus, Kushmanda Churna, Natural Honey, Ushnodaka

### Introduction:-

According to World Health Organization (WHO) the term diabetes mellitus (DM) describes a metabolic disorder of multiple aetiology characterized by chronic hyperglycaemia, with disturbances of carbohydrate, fat and protein metabolism, resulting from defects in insulin secretion, insulin action.<sup>1</sup> Currently DM is most common and wide spread Metabolic disorders in the world<sup>3</sup>. In our Ayurveda *Prameha* can correlate with Diabetes mellitus due to its similar characteristics.

In 2008, an estimated 347 million people in the world had diabetes and the prevalence is growing, particularly in low- and middle-income countries.<sup>2</sup> India had 69.2 million people living with diabetes (8.7%) as per the 2015 data<sup>2</sup>. Of these, it remained undiagnosed in more than 36 million people<sup>4</sup>. Over time, high blood sugar can seriously compromise every major organ system in the body, causing heart attacks, strokes, nerve damage, kidney failure, blindness, impotence and infections that can lead to amputations<sup>5</sup>. Diabetes is treatable. Diabetes can be controlled and managed to prevent complications. Increasing access to diagnosis, self-management education and affordable treatment are vital components of the response. So good thing is that our Ayurveda has been given answer of Diabetes or *Prameha* before thousand years back; as almost all *Acharya*<sup>6,7</sup> described Diabetes Mellitus (*Prameha*) with miraculous treatment in details. Among that use of *Kushmanda*<sup>8</sup> *Churna* is one of the best for *Prameha*.

### Aims & Objectives –

1. To study the efficacy of *KushmandaChurna* used in Type2 DM.
2. To study detail cause of Type2 DM.
3. To study various concepts of *Prameha*(Diabetes Mellitus) regarding causes & treatments in Ayurveda.
4. To study the effectiveness of *KushmandaChurna* in *Prameha* w.s.r. Diabetes Mellitus .

### Material & Methodology :-

It is simple, random group study with sample size 20. It was conducted on patients who were suffered from Type2 DM. Samples were selected randomly from Department of *Kayachikitsa* of ShriSantEknathRugnalaya, Shevgaon.

### Inclusion Criteria :-

1. Patients were selected irrespective of religion, sex and occupation.
2. Age group 30 to 60 years
3. Post prandial blood sugar level is less than or equal to 200mg/dl

### Exclusion Criteria :-

1. Unconscious, deaf and dumb patients.
2. Type 1 Diabetes Mellitus
3. Severe GI, liver, CVD diseases, pancreatitis, neuroendocrinal tumors, acute MI etc..
4. Having blood sugar level >200mg/dl

### Methodology:-

Thoroughly history had been taken regarding to sign and symptoms of patients. Selected patients were drawn into 2 groups e.g. Group A & B.

Group A -10 patients were treated with *KushmandaChurna* with natural honey<sup>9</sup> as anupan

Group B – Whereas other 10 patients were administered with *KushmandaChurna* with *Ushnodaka*<sup>10</sup> asanupan

All treatment were done daily for 1 month. Assessment was done every 7th day.

### Drug Administration:-

Table No. 1 – Administration of Procedures

Sr. No.	Topic	Group A	Group B
1	Medicine	<i>KushmandaChurna</i>	<i>KushmandaChurna</i>
2	Anupana	Natural Honey	<i>Ushnodaka</i>
3	Dose	6gm <i>Churna</i> + 12 gm Honey	6gm <i>Churna</i>

4	Time	Just before Lunch & Dinner	Just before Lunch & Dinner
5	Duration	1 Month	1 Month

**Follow Up :-**

There were five follow up performed for case study which included 1<sup>st</sup> (Base line), 2<sup>nd</sup> (7<sup>th</sup> day), 3<sup>rd</sup> (14<sup>th</sup> day), 4<sup>th</sup> (21<sup>st</sup> day) & 5<sup>th</sup> (28<sup>th</sup> day) follow ups.

**Assessment Criteria :-**

**Table No.2- Gradation for signs and symptoms**

Sr No	Observation	Normal	Score	Borderline	Score	Abnormal	Score
1	Bahumutrata (Urine Quntity)	5 to 6 times /day	0	7 to 8 times / day	1	9 to 10 times / day	2
2	Mutraavilata (Colour of urine)	Medium yellow	0	Colourless	1	Cloudy	2

**Table No. 3 -Blood Sugar Level (BSL) Normal-Abnormal Fasting & Post Prandial Values**

Sr.No	BSL Fating Values(mg/dl)		BSL Post Prandial values (mg/dl)	Result	Score
	Minimum	Maximum			
1	70	100	Less than 140	Normal	0
2	101	126	140 to 200	Borderline or early diabetes mellitus	1
3	>126	-	>200	Abnormal / Established Diabetes Mellitus	2

**Table No.4-Urine Sugar Fasting & Post Prandial Presentation**

Sr no	Urine strip colour observation	Result	Score
1	Light turquoise	Normal	0
2	Light green	Trace	0
3	Green	+	1
4	Dark Yellow	++	1
5	Light brown	+++	2
6	Dark brown	++++	2

**Observations & Results :-**

Before started the treatment, all patients of both groups had all signs and symptoms (mild to severe) which mentioned in Table no .2 in different manner like much or less. After treatment there was decreased in signs and symptoms of both groups had been seen.

**Table No 5 – Number of patients showing sings & symptoms before treatment(BT) and after treatment(AT)**

	Group A		Group B	
	B.T.	A.T.	B.T.	A.T.
Bahumutrata(Urine Quntity)	10	2	10	4
<i>Mutraavilata</i> (Colour of urine)	10	2	10	3
Blood Sugar Fasting	10	3	10	5
Blood Sugar Post Prandial	10	3	10	5
Urine Sugar Fasting	10	3	10	4
Urine Sugar Post Prandial	10	2	10	4

**Table No 4 – Group wise Improvements In Parameters After Treatments**

Group	Number of Patient	Parameters					
		<i>Bahumutrata</i>	<i>Mutraavilata</i>	Blood Sugar Fasting	Blood Sugar Post Prandial	Urine Sugar Fasting	Urine Sugar Post Prandial
A	10	08(80%)	08(80%)	07(70%)	07(70%)	07(70%)	08(80%)
B	10	06(60%)	07(70%)	05(50%)	05(50%)	06(60%)	06(60%)

**Statistical Analysis:-**

Paired ‘t’ and unpaired ‘t’ test is applied for analysis.

**Table No. 5- Findings in Group A after t/t by paired ‘t’ test**

	Mean	$\sum(x-x)^2$	Std. Dev.	Std. Error	t <sub>9</sub>	Result
<i>Bahumutrata</i>	1.3	4.1	0.225	0.0712	18.26	As p<0.001 treatment is highly significant
<i>Mutraavilata</i>	1.3	4.1	0.225	0.0712	18.26	
Blood sugar Fasting	1.1	5.4	0.2582	0.0816	13.48	
Blood Sugar Post prandial	1.1	5.4	0.2582	0.0816	13.48	
Urine Sugar Fasting	1.1	5.4	0.2582	0.0816	13.48	
Urine Sugar Post prandial	1.3	4.1	0.225	0.0712	18.26	

**Table No.6- Findings in Group B after t/t by paired ‘t’ test**

	Mean	$\sum(x-x)^2$	Std. Dev.	Std. Error	t <sub>9</sub>	Result
<i>Bahumutrata</i>	0.9	8.9	0.3315	0.1048	8.58	As p<0.001 treatment is highly significant
<i>Mutraavilata</i>	1.1	5.4	0.2582	0.0816	13.48	
Blood sugar Fasting	0.8	5.6	0.263	0.0831	9.62	
Blood Sugar Post prandial	0.8	5.6	0.263	0.0831	9.62	
Urine Sugar Fasting	0.9	2.9	0.1892	0.06	15	
Urine Sugar Post prandial	0.9	2.9	0.1892	0.06	15	

Table No.7- Comparison of Group A&B after treatment by unpaired 't' test

	Std. Dev.	Std. Error	t <sub>18</sub>	Result
<i>Bahumutrata</i>	2.5193	0.5039	0.7938	As p> 0.001 treatment is not significant
<i>Mutraavilata</i>	2.3248	0.463	0.4319	
Blood sugar Fasting	2.635	0.527	0.5693	
Blood Sugar Post prandial	2.635	0.527	0.5693	
Urine Sugar Fasting	2.485	0.497	0.4024	
Urine Sugar Post prandial	2.186	0.4371	0.9151	

When we compared treatment of 2 groups, for all symptoms p is greater than 0.001, difference is not significant. Treatment of any Group found significant. Hence *Kushmandachurna with Natural honey or Ushnodaka* are effective on *Prameha* s.r. to Type 2 DM.

**Results:** With the treatment of 4 weeks, Group A showed dramatic improvements in signs and symptoms. Resolution of *Bahumutrata*, *Mutraavilata*, Urine sugar post prandial occurred in about 80% of patients. Whereas 70% of patients having reduction in Blood sugar fasting, blood sugar post prandial and urine sugar fasting. In patients of Group B, Blood sugar fasting and post prandial shows good results in 50%. Cessation of *Bahumutrata*, Urine sugar fasting & post prandial occurred in 60%, whereas *Mutraavilata* reduced in 70%. So use of *Kushmandachurna with anupana as Natural honey or Ushnodaka* shows significant effect. But when compared before and after treatment by applying 't' test to parameters, p>0.001 hence difference is not significant. Any treatment can use for *Prameha*

#### Discussion:-

#### *KushmandaChurna*<sup>11,12</sup> *Madhu* (Natural Honey)

1. *Rasa* - *Madhur* *Madhura*, *Kashaya*
2. *Guna* - *Laghu*, *Snigdha*, *Sheeta* *Ruksha*, *Laghu*, *Sukshma*, *Pichhila*
3. *Virya* - *Sheeta* *Ushana*.
4. *Vipaka* - *Madhura* *Katu*
5. *Prabhawa* - *Medhya*

#### Action of *Kushmanda* with *Madhu*-

In *Prameha*, *Kushmanda* may help to treat *dhatu-shaithilya* due to its *Kapha-pittahara* and *Kshariya* properties. Its having *sheetvirya* and *kshariya* properties act as *Bastishodhaka*. *Kushmanda* work as *balya* in *Pramehi* patient. *KushamndaChurna* which possess properties like *Vatanulomaka*, *Trushnanigrahanatridoshaghna*, *raktapittaprashamana* etc., due to which nourishment of the tissue elements of *Pramehi* patients can take place. *Kushmanda* is described by *Rajanighantu* for all types of *Prameha*. Natural honey have *sukshma*, *laghuguna* due to this it reaches first tissue of body and goes to most subtle parts e.g. up to *Med*, *mans*, *majja*, *raktadidhatu*. It is *Yogawahi* i.e. it enhances the therapeutic effects of drug which are added to it. Honey alleviates all 3 doshas but primarily *Kaph* because of *ushnavirya* and *katuvipaka*.

#### Action of *Kushmanda* with *Ushnodaka* -

According to *Yogaratanakara* *ushnodaka* described as *Sadapathya* (always good for health). *Ushnodaka* have *kaphaghna*, *Medaghna*, *Vataghna*, *Amadoshnashak* properties. According to *Sushruta* *ushnodaka* work as *bastishodhak*. So if we use *Kushmandachurna* with *ushnodaka* it act on *tridoshdushti*, *dhatugatdushti* and important on *bastidushti* due having *laghu*, *ruksha*, *sheetaguna* and *tridoshahara* property. According to *Vagbhatacharya* *Ushnodaka* have *dipak*, *pachak*, *Mutrashohak* properties which beneficial to act on vitiated *pachakpiita*, *agnimandya*, *mutravuddhi* in *Prameha*.

### Sampraptibhanga-

According to *Madhavanidanapramehastart* with vitiated *tridosha*. Though in *sampraptitridosha* mentioned but *kaphadoshavitation* shown prominently. We have use *KushmandaChurna* with natural honey for *prameha*. Here both drugs are *tridoshahara*, so its helpful to balance *tridosha*. Now if we see *saperatedoshdushti* of *kledakkaph*, *pachak pitta* and *saman -apanvayu*. First of all in *saman* and *apanvayudushti*, *Shitvirya*, *Kshariya*, *Bastishodhana*, properties of *kushmandachurna* help to balance them. Due to *havingvatanulomaka*, *trushnanigrahana*, *Pittashamaka* it act as *Pachaka*. We were used natural honey too, it having *agnidipak*, easy to digest, *yogawahi*, *pittaghna* properties which beneficial to recover *pachak pitta dushti*. Related to *vata dushti* both *Kushmandachurna* and natural honey possessing *tridoshahara*, *kledaghna*, *bastishodhak* properties which act on vitiated *samanavata* and *apanvata* and help in balancing them in human body. One more important thing in breakdown of *samprapti* is *Yogawahi* and *Suksmaguna* of natural honey; due to this medicine reaches the first tissue of the body and goes to the most subtle parts. Due to *kledotpatti*, *mutravrudhi*, *dhatwgnimandya* leads to *dhatushaithilya*; but we are using *Kushmandachurna* with natural honey which have some of *ushna*, *ruksha*, *grahi*, *katu*, *kashayaras* properties to defend *dhatushaithilya*. On another way *Usnhodaka* have *kaphaghna*, *Medaghna*, *Vataghna*, *Amadoshnashak* properties are good remedy for *Pramehi* patients.

### Conclusion :-

Group A shows highly significant relief in the chief complaints of *Prameha* when compared within group. They are- *Bahumutrata*, *Mutraavilata*, Fasting and Post Prandial Sugar as well as urine. On other hand Group B also shows highly significant result in reducing all signs and symptoms. In Gr A & B, respective treatment proved to be very effective. But when outcomes compared with each other (Between Gr A & B), no significant difference found. So we can use any remedy in *Prameha*.

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