IAMJ

Research Article *International Ayurvedic Medical Journal* *ISSN:2320 5091*

A COMPARATIVE STUDY ON *KATAK KHADIRADI KASHYAYAM* AND *NIRURYADI GULIKA* IN THE MANAGEMENT OF *MADHUMEHA* W.S.R. TO HYPERGLYCEMIA

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ABSTRACT

The study was conducted on 40 clinically diagnosed patients of hyperglycemia with an objective of clinical evaluation of the efficacy of *Katak Khadiradi Kashyayam* and *Niruryadi Gulika* in the management of *Madhumeha* (Hyperglycemia). These patients were randomly divided into three groups of 10 patients each. Out of that 30 patients has been completed clinical trial and 10 patients was drop out.

The study confirms that *Katak Khadiradi Kashyayam* and *Niruryadi Gulika* is effective in management of *Madhumeha* and definitely reduces the symptoms of illness that includes *Prabhuta mutrata* (Polyuria), *Klama* (early fatigue), *Alasya* (Lassitude), *Vibandh* (Constipation) (In Group 3) including *Ati sweda* (Sweating), *Mukha shosha* (Dryness of mouth) (In Group 1).

The chosen drug is effective (laboratory parameters) in reducing Post Prandial Blood Sugar and, Post Prandial Urine Sugar (In group 2 and 3) (highly significant in group 3 and significant in group 2), only PPBS in Group 1 (significant result). No adverse effects were noted in any of the patients during the trial period.

Keywords: *Mudhumeha*, Hyperglycemia, *Katak Khadiradi Kashyayam, Niruryadi Gulika*

INTRODUCTION

All those patients who pass urine which is sweet & resembles like honey and the body also becomes sweet are said to be suffering from *Madhumeha*. In *Brihatrayi* detailed description of aetiological factors of *Prameha* are available and etiology described there is very near to current aetiological factors for DM (Diabetes mellitus). According to the International Diabetes Federation, the number of diabetic patients in India more than doubled from 19 million in 1995 to 40.9 million in 2007. It is projected to increase to 69.9 million by 2025.Currently; up to 11% of India's urban population and 3% of rural population above the age of 15 have diabetes. Calling India the diabetes capital of the world, the international journal of diabetes in developing countries says that there is alarming rise in prevalence of diabetes, which has gone beyond epidemic form to a pandemic one.

According to pathogenesis and clinical manifestation, Diabetes mellitus can be easily correlated with *madhumeha*. *Madumeha* is being described under the subtype of *vataja prameha.* It has been broadly elaborated in main ancient *Ayurveda* texts like *Brihatraye* and *Laghutraye.* Considering the seriousness of the condition and its prognosis, it is being too referred to *Mahagada* or *Maharoga*.

A Diabetes Mellitus, the most common endocrine disorder and a clinical syndrome characterized by hyperglycaemia due to relative or absolute deficiency of insulin resulting in long standing metabolic derangements associated with pathophysiological changes in multiple organ system of eyes, kidneys, nerves and vascular system being characteristically susceptible.

The W.H.O. estimates that mortality from diabetes and heart disease cost India about $120 billion every year and is expected to

increase to $335 billion in the next ten years. These estimates are based on lost productivity, resulting primarily from premature death.

Diabetes mellitus is a growing health hazard in developing countries. As a psychosomatic disease and due to most dangerous complications, diabetes mellitus has grabbed the attention of health community all over the world. Globally, diabetes affects 246 million people, which is about 6% in the total adult population .It is the 4th leading cause of death by disease and every 10 sec a person dies from diabetes related causes in the world. The Top ten countries, in numbers of sufferers, are India, China, USA, Russian Federation, Brazil, Germany, Pakistan, Japan, Indonesia and Mexico.

AIMS AND OBJECTIVES

The present research trial has been undertaken with the following main objectives-

- Conceptual and clinical studies on *Mudhumeha* W.S.R. to Hyperglycemia and its management with time tested *Ayurvedic* principles.
- To evaluate Antihyperglycemic effects of the *Katak Khadiradi Kashyayam* (*Sahasra Yogam*, CCRAS publication, *pratham prakaran – kashyaya yog* 71, page no.16) and *Niruryadi Gulika* (*Sahasra Yogam*, CCRAS publication, *duvitiya prakaran – gutika yoga* 69, page no.142) in a series of patients suffering from *Madhumeha* on various scientific parameters.
- To compare the efficacy of Antihyperglycemic effects of the *Katak Khadiradi Kashyayam* and *Niruryadi Gulika*

MATERIALS AND METHODS

1. Selection of cases

The study recruited a population of 40 clinically diagnosed patients of *Madhumeha* (hyperglycemic) selected from O.P.D. / I.P.D. unit of P.G. Department of *Kayachikitsa*, National Institute of Ayurveda, Jaipur and *Seth Surajmal Bombewala* Hospital, *Kishanpole Bazar*, Jaipur . Out of which 30 patients has been completed clinical trial and 10 patients was drop out during the trial period. A regular record of the assessment of all patients was maintained according to proforma prepared for the purpose. Following inclusion and exclusion criteria's were used for registration of the patients for present clinical trial.

(a) Inclusion criteria

- Patient with clinical history of DM.
- Patient having hyperglycaemia confirmed by laboratory investigation.
- Presence of Cardinal symptoms of *Madhumeha* as described in *Ayurveda* texts.

(b) Exclusion criteria

- Patient having Type 1 DM.
- Age below 20 and above 70 years.
- Patient of Type II DM who were on insulin therapy.
- Complication with DM.
- Patient having any serious illness.
- Patient having a FBS >250 AND PPBS >300.

2. Selection of drugs

Taking the symptoms and the *Samprapti* of *Madhumeha* into consideration, a "*Katak Khadiradi Kashyayam* and *Niruryadi Gulika*" has been selected. The drug selected for the study a *Katak Khadiradi Kashyayam* were mainly having *Tikta, Katu, Kashaya rasa, Katu Vipaka, Laghu, Ruksha & Tikshna Guna pradhana aoshdhi*. All the selected drugs were having *Mutrasagrahaniya, Jatharagni vardhak, vayasthapana, chakshushya, rasayan, vrishya, grahi, lekhana, deepana, oja vardhana and pachana*.

Table 1: Showing the Contents of *Katak Khadiradi Kashyayam*

S. No.	Drugs	Botanical study	Part use	Quantity (g)
1	*Katak*	*Strychnous potatorum*	Seed	1.852
2	*Khadir*	*Acacia catechu*	Heart wood	1.852
3	*Amalaki*	*Embelica officinalis*	Fruit rind	1.852
4	*Saptachakra*	*Salacia chinensis*	Root	1.852
5	*Daruharidra*	*Berberis aristata*	Bark	1.852
6	*Samanga (Lajjalu)*	*Mimosa pudica*	Whole plants	1.852
7	*Vidula (Chotapashanbheda)*	*Homonoia riparia*	Root	1.852
8	*Haridra*	*Curcuma longa*	Rhizome	1.852
9	*Patha*	*Cissampalo-us pareira*	Rhizome	1.852
10	*Amra*	*Mangifera indica*	Seed	1.852
11	*Haritaki*	*Terminalia chebula*	Fruit rind	1.852
12	*Abda (Nagarmotha)*	*Cyperus rotundus*	Rhizome	1.852

Method of preparation of *Kashyayam*:

Decoction (*Kvātha* or *Kasāya)* is the filtered liquid obtained by boiling coarse powder of drug(s) in proportion of 4, 8 or 16 [*Mrudu Dravya* - 4, *Madhyama Dravya* - 8 and *Kathina Dravya* - 16 respectively] times of water and reduced to one-fourth.

Therefore from above Contents of *Katak Khadiradi Kashaya* drugs is in *madhyama* form. For the preparation of decoction from no.1 to no.12 of drugs were taken in equal quantity and checked out for their identity, quantity and quality. The individual drugs were mixed in equal quantity and made into *bharad* form. After that two teaspoon (10 gm) of *Yavakuta Churna* (coarse powder) *is* taken for preparation of decoction in the 80 ml of water, a proper (mild) heat is given and when it reduces up to 20 ml filter through the muslin cloth, now decoction is ready to drink before meal (bid).The medicine *Yavakuta Churna* (coarse powder) was prepared in the pharmacy of N.I.A., Jaipur.

Method of administration: Orally in the form of decoction in a dosage of 20 ml twice in a day before meal.

Duration of the trial: The clinical trial was continued for 30 days with each patient with a 15 days review.

Table 2: Showing the contents of *Niruryadi Gulika*

S.No.	Drugs	Botanical Name	Part use	Quantity (g)
1.	*Niruri*	*Phylanthus reticulate*	Root	0.03
2.	*Saptachakra*	Salacia chinensis	Root	0.03
3.	*Nirmali*	*Strychnous potatoum*	Fruit	0.03
4.	*Samudraphen*	-	Cuttle fish bone	0.03
5.	*Emali*	*Tamarandus indica*	Bark of Seed	0.03
6.	*Haritaki*	*Terminalia chebula*	Fruit rind	0.03
7.	*Vibhitak*	*Terminalia belerica*	Fruit rind	0.03
8.	*Amalaki*	*Emblica officinallis*	Fruit rind	0.03
9.	*Kapittha*	*Limonia accedecima*	*Niryasa*(Resin)	0.03
10.	*Kumud*	*Nymphea alba*	Seed	0.03
11.	*Ayaskant*	*Magnetic iron*	Bhasma	0.03
12.	*Gairic*	*Ochre*	Bhasma	0.03
13.	*Haridra*	*Curcuma longa*	Rhizome	0.03
14.	*Daruharidra*	*Berberis aristata*	Root	0.03
15.	*Chandan*	*Santalum album*	Heart wood	0.03
16.	*Sharkara*	*Sitopala*	Powder	0.03
17.	Udumbar	*Ficus Glomerata*	Bark	0.03

Niruryadi gulika was purchased from pharmacy of *Arya vaidya sala, Kotakkal*.

Dose and *Anupana:* Dose of *Niruryadi gulika* was 2 tablets (each of 500 mg) in the afternoon before lunch and at night before the dinner with Luke warm water for 30 days.

3. Pre Treatment Observations

All the patients have been studied along with the registration by noting down their demographic profile including their age, sex, address, occupation, education, socio economic status, marital status, life style, addictions, dietary habits etc. After preliminary registration, patients were subjected to detailed case history taking, physical, general and systemic examinations. In history and examination importance was given to symptoms of *Madhumeha*. During this all other relevant information's like *Ashtavidha Pariksha* and *Dashvidha pariksha* including assessment of *Sharirika Prakriti* and *Manasika Prakriti* (based on the features described in classical texts) etc. were noted.

4. Administration of Drug & Treatment Schedule

40 registered, clinically diagnosed and confirmed patients of *Madhumeha* (Hyperglycemic) were selected for the present clinical trial and randomly divided into following three groups out of that 30 patients has been completed clinical trial and 10 patients was drop out during the trial period.

GROUP- I: 10 patients of *Madhumeha* (Hyperglycemic) were administered *Katak Khadiradi Kashyayam* in a dose of 20 ml twice daily for a period of 30 days before meal.

GROUP- II: 10 patients of *Madhumeha* (Hyperglycemic) were administered *Niruryadi Gulika* in a dose of 2 tablet (each of 500 mg) with lukewarm water twice daily for a period of 30 days before meal.

GROUP- III: 10 patients of *Madhumeha* (Hyperglycemic) were administered *Katak Khadiradi Kashyayam* in a dose of 20 ml twice daily for a period of 30 days before meal and *Niruryadi Gulika* in a dose of 2 tablet (each of 500 mg) with lukewarm water twice daily for a period of 30 days before meal. All the patients were advised to undergo following laboratory investigations before starting the trial to rule out a hyperglycemia and other illness; if present then exclude them from the trial.

a) Blood Examinations

(i) F.B.S. (Fasting Blood Sugar)
(ii) P.P.B.S. (Post *Prandial* Blood Sugar)
(iii) C.B.C. and E.S.R.

b) Urine Examination

(i) Routine Examination
(ii) Microscopic examination.
(iii) F.U.S. (Fasting Urine Sugar)
(iv) P.P.U.S. (Post *Prandial* Urine Sugar).

Patients were followed up after 15 days and changes, improvements, deterioration and any other effects produced after the therapy were noted down.

5. Criteria for Assessment

After the completion of the treatment, the results were assessed by adopting the following criteria.

- Improvement in signs and symptoms of disease on the basis of symptoms score.
- Improvement in laboratory Investigation (i.e. reduce levels) on the basis of lab reports.
- Reduction in Objective assessment parameters.

For clinical evaluation the criteria can be divided in to two types:

1. Subjective Assessment

2. Objective Assessment

1. Subjective assessment

All symptoms taken for the assessment of clinical improvements were thoroughly examined and the severity of each symptom was rated before and after the trial for clinical assessment. For this purpose the following "Symptom Rating Scale" developed by *Prof. K. Govardhan* et.al was used.

A. *Prabhoot Mootrata* (Polyuria)

Frequency of Urine

3-6 times/day, rarely at night - 0

7-9 times /day, 0-2 times/night - 1

10-12 times /day, 2-4 times/night - 2

> 13 times /day, >4 times/night - 3

B. *Swedadhikya* (Excessive Sweating)

Normal Perspiration - 0

Mild after doing exertion - 1

Moderate after exertion - 2

Severe after exertion -3

Perspiration without exertion - 4

C. *Klama* (Early fatigue)

No fatigue - 0

Mild after doing work - 1

Moderate after doing work - 2

Severe after doing work - 3

Feeling fatigue without doing work - 4

D. *Aalasya* (Lassitude)

Normally active - 0

Hesitate to start work but once started completed - 1

Clinical Improvement

Starts but does not complete -2

Start work under compulsion - 3

E. *Mukha Shosha* (Dryness in mouth)

Absent - 0

Mild - 1

Moderate - 2

Severe - 3

F. *Vibhanda* (Constipation)

Pass stool as per normal schedule - 0

Passes stool with strain, sometimes takes purgative - 1

Pass stool usually after 24 hrs, frequently takes purgative - 2

Pass stool/ per 2day - 3

Purgative doesn't work - 4

2. Objective assessment

(a) Assessment of Body Mass Index (B.M.I). (Weight in kg/height in meter^2)

18.5-24.9 - 0

25 – 29.9 -1

30 -34.9 - 2

35 -39.9 - 3

>40 - 4

OBSERVATIONS AND RESULTS

Subjective improvement

After the completion of therapeutic trial there was marked improvement in the *Prabhuta mutrata* (Polyuria), *Klama* (early fatigue), *Alasya* (Lassitude), *Vibandh* (Constipation) (In Group 3) including *Ati sweda* (Sweating), *Mukha shosha* (Dryness of mouth) (In Group 1).

Table 3: Showing the overall comparative improvement in clinical feature of *Madhumeha* in three treated groups

S. No	Symptoms	Group I			Group II			Group III		
		%	P	Result	%	p	Result	%	p	Result
1.	*Prabhotamutrata*	33.33	< 0.05	S.	50	> 0.05	N.S.	33.3	<0.05	S.
2.	*Avilmutrata*	21.1	> 0.05	N.S.	21.1	> 0.05	N.S.	44.4	> 0.05	N.S.
3.	*Pipasadhikya*	22.2	> 0.05	N.S.	22.2	> 0.05	N.S.	41.7	> 0.05	N.S.
4.	*Kshudhadhikya*	27.3	> 0.05	N.S.	0	> 0.05	N.S.	16.7	> 0.05	N.S.
5.	*Ati sweda*	42.9	< 0.01	S.	33.3	> 0.05	N.S.	20	> 0.05	N.S.
6.	*Hastapada & Sandhi shoola*	37.5	> 0.05	N.S.	30	>0.05	N.S.	23.1	> 0.05	N.S.
7.	*Klama*	25	> 0.05	N.S.	46.2	> 0.05	N.S.	38.9	<0.05	S.
8.	*Mukha shosha*	38.5	< 0.01	S.	44.4	> 0.05	N.S.	0	> 0.05	N.S.

9.	*Alasya*	40	<0.05	S.	44.4	> 0.05	N.S.	53.3	<0.05	S.
10.	*Vibandh*	50	<0.05	S.	28.6	> 0.05	N.S.	87.5	<0.05	S.
11.	*Karapada tala daha*	11.1	> 0.05	N.S.	16.7	> 0.05	N.S.	28.6	> 0.05	N.S.
12.	*Mukhamadhurya*	40	> 0.05	N.S.	50	> 0.05	N.S.	40	> 0.05	N.S.
13.	*Jananang Kandu*	-	-	-	0	> 0.05	N.S.	100	> 0.05	N.S.
14.	*Kara pada tala supti*	-	-	-	42.9	> 0.05	N.S.	0	> 0.05	N.S.

Objective parameters

- Study on changes in blood sugar have revealed that there was significant reduction (Group I and II) and highly significant (in Group III) in the level of post Prandial blood sugar in the all the patients of three groups but the percentage of reduction was maximum in patients of Group-III, where *Katak Khadiradi Kashyayam* was administered with *Niruryadi Gulika*, also significant reduction in fasting blood sugar in patient of Group-III. (Table No. IV)
- Significant reduction in the level of post prandial urine sugar in Group-II and highly significant reduction was observed in patients of Group-III. (Table No. IV)

Table 4: Showing the overall comparative improvement in lab parameters of *Madhumeha* in three treated groups

S. No	Lab Investigation	Group I			Group II			Group III		
		%	P	Result	%	P	Result	%	P	Result
1	Fasting Blood Sugar	6.85	> 0.05	N.S.	13.72	> 0.05	N.S.	18.51	<0.05	S.
2	Post Prandial Blood Sugar	16.97	<0.05	S.	13.86	<0.05	S.	18.65	<0.001	H.S.
3	Fasting Urine Sugar	20	> 0.05	N.S.	12.5	> 0.05	N.S.	66.7	> 0.05	N.S.
4	Post Prandial Urine Sugar	17.9	> 0.05	N.S.	42.1	<0.02	S.	88.9	<0.001	H.S.
5	HB g%	3.27	> 0.05	N.S.	1.5	> 0.05	N.S.	0.23	> 0.05	N.S.
6	ESR	20.4	> 0.05	N.S.	40	> 0.05	N.S.	10.5	> 0.05	N.S.
7	TLC	7.29	> 0.05	N.S.	6	> 0.05	N.S.	9.06	> 0.05	N.S.

Table 5: Showing the overall comparative physiological improvement in three treated groups

S. No.	Physiological parameters	Group I			Group II			Group III		
		%	p	Result	%	P	Result	%	p	Result
1.	Body Wt. (Kg)	0.5	> 0.05	N.S.	0	> 0.05	N.S.	0.5	> 0.05	N.S.
2.	BMI (Body mass index)	0.63	> 0.05	N.S.	0.03	> 0.05	N.S.	0.4	> 0.05	N.S.
3.	Systolic blood pressure (in mm Hg)	0.48	> 0.05	N.S.	0.76	> 0.05	N.S.	5	> 0.05	N.S.
4.	Diastolic Blood Pressure (in mm Hg)	1.3	> 0.05	N.S.	0.5	> 0.05	N.S.	0	> 0.05	N.S.

HS= Highly Significant, S= Significant, NS= Not Significant

Probable mode of action of *Katak Khadiradi Kashyayam*

Jatharagni mandya is present in *Madhumeha* and K*atu, Tikta rasa* present in *kashayam* it may act in *vardhana* of *agni*. *Kashaya rasa* is present up to 83.33%, which may produce *Mutrasamgrahniya prabhava*. *Tikta, Kashaya rasa* present in this formulation produces *Shoshana* effect. Hence the *Prabhoota mutrata* in *Prameha* tend to regress.

When predominant *Guna* is present in research drug are assessed it becomes evident that most of the drugs possess *Laghu ,Ruksha Guna* (i.e. 100% and75%). *Ruksha guna* helps in alleviation of *Bahudrava shleshma* and *Abaddha meda*, the annexation of two being initial triggering event in *samprapti* of disease. Obstruction of *Vata* by *Kapha* and *medas* as K*apha* here *aarambhak dosha* and *Vata* is *preraka dosha. Laghu* and R*uksha guna* by virtue of their *kaphaghana* and *medoghana prabhava* help in reducing tissue weight. Now it can be suspected that *kashaya rasa, Laghu, Ruksha guna* like properties can further aggravate vitiated *Vata dosha* in *Madhumeha* . In this context it is proposed that here it is obstructed *Vata* (primarily by *Kapha* & *Medas*) which is causing trouble; *Vata* here may not be increased quantity wise in body , only obstruction is there in

its natural passages which can be alleviated by *Kaphahara, medohara* drugs.

In the compound majority of drugs are found to have *Ushna Virya*. In 1979 at BHU, Varanasi has proved that substance having *Ushna Virya* is accountable for breakdown of fat at mitochondrial level. *Meda* is invariably involved in pathogenesis of disease. According to *Ayurveda* principles *Ushna virya* helps in alleviation of *Kapha* and V*ata*.

As far as *Vipaka* is concerned *katu vipaka* enhances *jatharagni, dhatvagni* and normalize metabolic process. *Sheeta virya* and *Madhura vipaka* helps in replenishment of O*jus* which become depleted with disease progression owing to continued exposure of body to vitiated *Vata*. The drugs in compound formulation also possess *vayasthapana, chakshushya, rasayan, vrishya, grahi, lekhana, deepana* and *pachana* properties.

It has been clear from above account that Katak Khadiradi Kashyayam can well disintegrated *Samprapti* of *Madhumeha* by acting at various levels i.e. alleviating *dhatvagnimandya* owing to presence of certain *deepana pachana* drugs in it like *Bruhati, Mustak and Haridra* also *rukshata* and *laghuta* present in drug will combat increased *Kapha* and *meda* which similitude in their properties. *Aamalki* and *Haritaki* are two drugs, which are known to exert *rasayan prabhava* too thereby causing *oja vardhana,* which is being depleted in body of *Madhumehi* owing to chronic exposure to *Vata* in body.

Probable mode of action of *Niruryadi Gulika*

In *Niruryadi Gulika* the maximum drug having a *Kashaya, Tikta* and *Madhur Ras*; *Laghu, Rukshya* and *Guru guna*; *Sheeta Virya* ; *Madhur* and *Katu Vipaka*.

According to *Charak*

Kinchidrasena kurute karma viryane chaparam |
Dravyam gunen paken prabhaven cha kinchan || Ch.Su. 26/71

According to above quotation, drug acts in the body in various ways. The *Samprapti* of *Madhumeha* is described earlier, for breakdown of that *Samprapti* the action of above *ras, guna, virya* and *vipak* are described as follows.

In the *Niruryadi Gulika* the *Kashaya ras* (64.70%) posses a properties like *Sangrahi, Sthambhan, Sharirkledasyopayokta* due to that a polyuria is one of the main symptoms that can be manage, and due to the *Sharirkledasyopayokta* properties a *abhaddha meda* and *kleda* that can get soaked.

Tikta Ras (58.82%) having a properties like *Srotomukhavishodhan, Ama pachaka, Murcha, Daha, Kandu, Kushatha, Trushna prashamana, Dipan, Pachana, Lekana, Sharira Kleda Soshana, Meda Soshana, Lasika Soshana, Swada Soshana, Mutra Soshana*. From these properties it is very clear that in the complication of *Madhumeha* like *Murcha, Daha, Kandu* and *Kushatha* it plays a role. A polydypsia is one of the prime symptoms that can be subsiding by this *ras (Trushna prashamana)*. The above described *Kleda, Meda,* etc. *soshana* properties of this ras helps for breakdown of *Dosha –Dushaya Samurchana*.

Madhura Ras having a properties like *Bala-Varnakar, Marutagna, Trushana, Daha Prashaman, Prinan, Jivan, Santarpana, Brumhana, Sthryakara, Murcha Prashamana.* According to these properties

it shows that it provide a strength to the *Madhumehi* patients because all *dhatu ksahya* is found in *Madhumeha (Ojomeha)* and also helps to nourished all *dhatu(Saptadhatu poshak)*.

Aamalki and *Haritaki* are two drugs, which are known to exert *rasayan prabhava* too thereby causing *oja vardhana.*

According to *Guna, laghu* (70.58%) is *lekhana* therefore it work on *aavabadhya meda*, *kleda*, and *mamsa* ; *rukshya*(52.94%) is *soshana* and *stambhana* properties it may be work on the polyuria. A *Katu Vipaka* also doing the same work like a *mutra baddha*. From above discussion it is hypotheses that, this Gulika work on the P*rameha* and *Madhumeha* like condition.

CONCLUSION

From present study following observations can be concluded: The disease *Madhumeha* is well documented in all perennial sources of *Ayurvedic* wisdom. *Madhumeha* has been discussed in *Prameha roga* as one of the *Vataj Prameha*. Literary evidence proves its modern correlate as Diabetes Mellitus. In this study it is found that *Madhumeha* mostly affects individuals in 5th, 6th and 7thdecade of life with slight male preponderance. Prevalence is seen more in married. As every sort of *Prameha* (20 types) bear every possibility to terminate ultimately into *Madhumeha* if left untreated so general aetiopathological factors, *purvapupa* etc. can well be appreciated for *Madhumeha* too. The study confirms that *Katak Khadiradi Kashyayam* And *Niruryadi Gulika* is effective in management of *Madhumeha* and definitely reduces the symptoms of illness that includes *Prabhuta mutrata*(Polyuria), *Klama* (early fatigue), *Alasya* (Lassitude), *Vibandh* (Constipation) (In Group 3) , including *Ati sweda* (Sweating), *Mukha shosha* (Dryness of mouth) (In Group 1). The chosen drug was effective in reducing Post Prandial Blood Sugar and Post Prandial Urine Sugar (In group 2 and 3) (highly significant in group 3 and significant in group 2) and also shows a significant result in Group 1 P.P.B.S. All the patients tolerated medicines very well and no side effects were reported by any of the patients, suggesting that the drugs selected for current clinical trial are absolutely safe for internal use. After overall scrutiny, it can be concluded that the proposed *Katak Khadiradi Kashyayam* and *Niruryadi Gulika* in current research exhibits significant hypoglycaemic activity and can be given safely in patients of *Madhumeha*.

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Source of support: Nil
Conflict of interest: None Declared