

**A COMPARATIVE STUDY OF YOGIC KARMA
(SHANKHA-PRAKSHALANA & ASANA) AND SPICO-KALP IN THE
MANAGEMENT OF MADHUMEHA (D.M. TYPE2)**

Gunjan Garg¹ Gopesh Mangal² N.S. Chundawat³

¹ Associate Professor, Department of Swasthavritta, MJF Ayurveda College, Chomu,
Jaipur

² Assistant Professor, Post Graduate Department of Panchkarma, National Institute of
Ayurveda, Jaipur

³ Former Professor & Head, PG Department of Swasthavritta & Yoga, National Institute
of Ayurveda, Jaipur - 302002, Rajasthan (India)

ABSTRACT

Introduction: *Madhumeha* is one of twenty types of *Prameha* as described in *Ayurvedic* classics. It is strikingly resembling with Diabetes mellitus of Modern science. It is becoming a great national catastrophe with a current prevalence rate of 2.4% to 11.6% in urban dwellers. It is taking literally the dimension of an epidemic and more dreaded because of its complications in almost every part of the body. Tendency towards sedentary life style and faulty dietary habits leads to *Madhumeha*. *Shankha prakshalana* and various *Asana* are reliable to control the *Madhumeha*. *Spices* are also known to exert several beneficial physiological effects including the anti-diabetic influence. Hence an attempt is made to compare the effect of *Yogic karma (Shankha prakshalana & Asana)* and *Spico kalp* (hypothetical indigenous compound) in the management of *Madhumeha*. **STUDY DESIGN:** 40 patients, fulfilling the inclusion and diagnostic criteria, were selected and randomly divided into four groups with 10 patients in each group. In Group A, *Shankha Prakshalana* was administered twice a month for two months with a set of selected 4 *Asana* conducted daily for 15 minutes in morning for two months. *Spico kalp* was given orally in the dose of 5 gm before meal twice a day with normal water for a period of two months. In Group B, *Shankha Prakshalana* and *Spico kalp* and in Group C, only *Spico-kalp* was administered. In Group D, modern medicine was given under the supervision of diabetologist. **RESULTS & CONCLUSION:** Marked relief was observed in *Pindikodvestana* (86.80%), *Atinidra* (81.81%), *Alasya* (81.50%), and F.B.S. (77.77%) in Group A; *Atinidra* (75.81%) and *Alasya* (78.00%) in Group B, while Group D shows marked relief in *Daurbalya* (76.80%), F.B.S. (82.75%) and P.P.B.S. (78.57%). Patients do not obtain marked relief in any symptom in Group C. **Overall effect of therapy:** Marked Improvement was observed in 20% patients in Group A and 10% patients in Group B & D. Moderate Improvement were observed in 80% patients among all groups. Mild Improvement was observed in 20% patients in Group C and 10% patients in Group B & D. No one was observed to have Improvement / Controlled or No response towards therapy in any group.

Key Words: *Madhumeha*, Diabetes mellitus, *Shankha prakshalana*, *Asana*.

INTRODUCTION

Madhumeha can be taken as Diabetes mellitus of modern science. In some contexts, the word *Prameha* has also been used as synonym to *Madhumeha* and vice versa. According to the Diabetes Atlas 2006 published by the International Diabetes Federation, the number of people with diabetes in India was 40.9 million (which was 32 million in 2000) is expected to rise to 69.9 million by 2025 unless urgent preventive steps are taken.^[1] 20 % of diabetic patients live in India. . India has thus become the “Diabetic capital of the world”. Type 1 DM is relatively rare in our country and less than 2% of the diabetics in India are having Type 1 DM, whereas more than 96% of the diabetics have Type 2 DM. Prevalence of Type 2 DM which was about 2% in early seventies has sharply risen to more than 8% in late nineties in urban areas in our country.^[2] Although the prevalence of type 1 and type 2 DM is increasing worldwide, but the prevalence of type 2 DM is expected to increase more rapidly in future because of increasing obesity and reduced physical activity. Diabetes Mellitus is a metabolic disorder in which carbohydrate utilization is reduced and that of lipid and protein enhanced due to deficiency of insulin characterized by hyperglycemia.^[3] The introduction of oral hypoglycemic drugs in modern therapeutics initially appeared a breakthrough in the treatment of Diabetes mellitus but subsequently it was experienced that most of the hypoglycemic drugs were inadequately effective and was associated with many major side effects. Hence successful and efficient management of Diabetes is the need of the hour. Thus, we aimed at to find out an effective and safe remedy to control the disease. In *Ayurveda Madhumeha* (diabetes mellitus) is described among the 20 sub types of *Prameha* and is predominantly a *Vatika* disease. *Ayurveda* believes that it occurs

mainly due to *Modusti*. This *Medodusti* vitiates *Mansa, Rakta, Kleda* and *Ojas*. *Acharya Charaka* has used term “*bahudrava shleshma tatha avabadha meda*” in the description of *Prameha* and *Dushyas* involved in it are mainly *Meda, Mamsa, Kleda, Shukra, Shonita, Vasa, Majja* etc. are all *Kapha vargiya*. All the *Dhatus* and *Malas* & all three *Doshas* are involved in the disease procedure. In *sutra 17, ‘Kiyantahshirsia Adhyay’ charak* says that the disease leads due to *Ojodusti*, when a person eats a rich diet with lack of exercise, it leads to vitiation of *Ojo*, which *Avrits* the *Mutravaha srotas* precipitating to *Prameha*.^[4] It seems to be the description of autoimmune diabetes mellitus. In *Nidan 4, ‘Prameh Nidan Adhyay’* and *Chikitsa 6 ‘Prameh Chikitsa Adhyay’* the pathogenesis starts with vitiation of *Medas*. According to *Charak* the *Manasdoshas - Rajas* and *Tamas* have a very great adverse effect on the body and three *Doshas* also.^[5]

Shankha prakshalana, Asana and a hypothetical oral medicine in powder form named ‘*Spico-kalp*’ is used as a therapeutic regimen in the study. In *Ayurveda, Chikitsa* has been explained under two folds: *Shodhana* and *Shamana*. *Shankha prakshalana* and various *Asana* are reliable to control the *Madhumeha*. Diet has been recognized as a corner stone in the management of diabetes mellitus. *Spices* are the common dietary adjuncts that contribute to the taste and flavor of foods. Besides, spices are also known to exert several beneficial physiological effects including the anti-diabetic influence.

Shankha-prakshalana is a yogic cleansing technique or purificatory process and is included under *Shatkarmas*, which is similar to *Shodhana* therapy of *Ayurveda*. Thus it is selected as *shodhana karma*, for the study. *Spico kalp* is a hypothetical indigenous drug, consists of ten spices. It is selected as *shamanaushadhi* for the present trial.

AIMS AND OBJECTIVES

- To evaluate the efficacy of *Shankha-prakshalana & Asana* in the management of *Madhumeha*.
- To evaluate the efficacy of *Spico-kalp* administered orally in the management of *Madhumeha*.
- To compare the effect of *Yogic karma (Shankha prakshalana & Asana)* and *Spico kalp* in the patients of *Madhumeha*.

MATERIALS AND METHODS

Study type: Prospective, open randomized. Patients fulfilling criteria and attending OPD and IPD & Yoga Unit of National Institute of Ayurveda, Jaipur and Diabetes, Thyroid & Endocrine centre, Jaipur. Total 48 patients were registered for the current trial. Out of them, 8 cases dropped out from the study and study was completed in 40 cases.

SELECTION CRITERIA

The cases were selected strictly as per the pre-set inclusion and exclusion criteria.

Inclusion Criteria:

- Patients aged between 18 to 70 years.
- Patients having the clinical features of *Madhumeha*.
- Patients having moderate RBS level up to 300mg/dl.
- Patients willing to sign the consent form.

Exclusion Criteria:

- Patients of diabetes mellitus type 1.
- Patients with acute illness like MI, CHF, malignant diseases.
- Patients with chronic diseases like TB, cirrhosis of Liver.
- Patients with diabetic complications.
- Pregnant women and lactating mother.

Diagnostic criteria:

Subjective parameters: Patients were diagnosed on the basis of symptomatology described in the *Ayurvedic* literature.

Objective parameters: Confirmation of the disease was made by laboratorial

investigation of blood sugar level [i.e. F.B.S. and P.P.B.S.].

Sample size and allocation: 40 patients were selected randomly and divided into 4 groups with 10 patients in each group.

Group A: In this group *Shankha prakshalana* was administered twice a month for two months. It was administered in a standard method under the aseptic measures & a set of selected 4 *Asana* was conducted daily for 15 minutes in morning for two months. *Spico-kalp* was given orally in the dose of 5 gm before meal twice a day with normal water for a period of two months.

Group B: In this group *Shankha prakshalana* and *Spico-kalp* was given in above mentioned manner.

Group C: In this group *Spico kalp* was given in above mentioned manner.

Group D: In this group modern medicine named *Glycomate-GP2* (Metformin Hydrochloride 500 mg & Glimepride 2 mg) was given B.D. before meal with water for two mths, under the supervision of diabetologist.

The effect of the therapy and drug was observed in relation to the basal records of symptoms and sugar level.

Drugs & Dosage:

- The trial drug selected for the clinical study was an herbal hypothetical compound in the form of powder i.e. *Spico kalp* containing spices. Dose was 5 gm before meal twice a day with normal water for a period of two months.
- The control drug taken for the study was *Tab. Glycomate-GP2* (Metformin Hydrochloride 500 mg & Glimepride 2 mg) B. D. with water for 2 months.

Duration of the trial: 2 Months (60 Days)

For the present clinical research work, a hypothetical indigenous compound is prepared in powder form. It consists of ten spices and named as “*Spico-kalp*”.

Table No. 1: Showing ingredients of Spico kalp (per 10 grams)

S.No.	Ingredients	Part use	Ratio
1.	<i>Maithi</i> (Fenugreek)	Seeds	1.66 gm
2.	<i>Darusita</i> (Cinnamon Bark)	Bark	1.66 gm
3.	<i>Haridra</i> (Turmeric)	Rhizome	0.83 gm
4.	<i>Tejpatra</i> (Leaves of cinnamon)	Leaves	0.83 gm
5.	<i>Jeeraka</i> (Cumin seeds)	Seeds	0.83 gm
6.	<i>Lavanga</i> (Clove)	Bud	0.83 gm
7.	<i>Sunthi</i> (Dry ginger)	Rhizome	0.83 gm
8.	<i>Maricha</i> (Black pepper)	Fruits	0.83 gm
9.	<i>Tulsi</i> (Holy basil)	Leaves	0.83 gm
10.	<i>Meetha Neem</i> (Curry leaves)	Leaves	0.83 gm

CRITERIA FOR ASSESSMENT OF RESULTS

Subjective parameters (signs and symptoms of the disease) and biochemical parameters (F.B.S. and P.P.B.S.) were clinically graded and improvements were assessed before and after the treatment in all groups. The grading was done in the following manner –

***Prabhuta Mutrata* [Polyuria]:**

Grade	Frequency in day	Frequency in night	Volume
0	3-4	0-1	Normal
1	5-6	2-3	Increased
2	7-8	4-5	Increased
3	> 8	> 5	Excessive

***Avila Mutrata* [Turbidity of Urine]:**

Grade	Turbidity
0	Crystal clear fluid
1	Faintly cloudy or hazy with slight turbidity
2	Turbidity clearly present but newsprint can be read through the tube
3	More turbidity and newsprint cannot be read

***Pipasadhikya* [Polydipsia]:**

Grade	Feeling of thirst	water Intake
0	Normal	1-2 liters
1	Increased, frequencies of drinking can be controlled	2-3 liters
2	Increased, frequencies of drinking can't be controlled	3-4 liters
3	Very much increased with frequent intake of water	> 4 liters

***Kshudhadhikya* [Polyphagia]:**

Grade	Quantity	Meals
0	Normal	2
1	Slightly increased, but can be tolerate	3
2	Moderately increased, but can be tolerate	3
3	Markedly increased, can't be tolerate without consuming food	4

***Pindikodvestana* [Cramps]:**

Grade	Cramps
0	No cramps
1	Cramps after walking 1 KM
2	Cramps after walking ½ KM
3	Inability in walking ½ KM

***Ati Sweda* [Excessive sweating]:**

Grade	Sweda
0	Normal
1	Slightly Increased
2	Moderately Present
3	Markedly Present

Karapada Daha [Burning sensation in hands and feet]:

Grade	Daha
0	Absent
1	Slightly Increased
2	Moderately Present
3	Markedly Present

Daurbalya [Weakness]:

Grade	Routine activity	Weakness
0	Normal	Without feeling weakness, can do heavy exercise
1	Normal	With feeling of weakness, can do heavy exercise
2	Disturbed	Can do mild exercise but not heavy
3	Disturbed	Can't do mild exercise

Atinidra [Excessive sleep]:

Grade	Sleeping hrs.	Divaswapna
0	6-7 satisfactory	No
1	7-9 satisfactory	½ - 1 hr
2	9-10 Not satisfactory	1-2 hr
3	> 10 Whole day feeling sleepy	2-3 hr

Alasya [Laziness]:

Grade	Alasya
0	No Alasya
1	Doing satisfactory work but late initiation
2	Doing unsatisfactory work with late initiation
3	Do not want to do work , no initiation

F.B.S.

Grade	FBS levels
0	Below 100
1	100-140
2	140-180
3	180-220
4	Above 220

P.P.B.S.

Grade	PPBS levels
0	Below 140
1	140-180
2	180-220
3	220-260
4	Above 260

OBSERVATIONS AND RESULTS

In the present study, maximum no. of patients were in the age group of 40-50 yrs, Majority of the patients i.e. 65% were male, Maximum no. of the patients i.e. 30% were servicemen, Major-

ity of the patients i.e.47.5% belongs to upper middle class, Mximum no. of patients i.e. 85% who opted for the study were married, Maximum no. of patients i.e.30% were having chronicity more than 5 yrs ,Maximum no. of patients i.e.

55% were having positive family history ,57.5% patients having positive history of obesity ,Majority of patients i.e. 72.5% were taking allopathic treat-

ment
Results of therapy in all the four groups were statistically analyzed.

1. Prabhuta Mutrata [Polyuria]:

Table No.2 Showing pattern of clinical improvement in polyuria in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	10	2.4	0.7	1.7	70.83	0.674	0.213	7.981	0.001	H.S
B	10	2.0	0.6	1.4	70.00	0.699	0.221	6.334	0.001	H.S
C	9	2.2	1.2	1.0	45.45	0.613	0.204	4.901	0.01	S
D	9	2.1	1.3	0.8	38.09	0.661	0.220	3.636	0.01	S

2. Avila Mutrata [Turbidity of Urine]:

Table No. 3 Showing pattern of clinical improvement in turbidity of urine in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	10	2.0	0.8	1.2	60.00	0.625	0.197	6.091	0.001	H.S
B	8	2.12	0.87	1.25	58.96	0.696	0.246	5.081	0.01	S
C	9	2.11	1.11	1.0	50.00	0.707	0.235	4.255	0.01	S
D	9	2.0	1.0	1.0	50.00	0.866	0.288	3.472	0.01	S

3. Pipasadhikya [Polydipsia]:

Table No. 4 Showing pattern of clinical improvement in polydipsia in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	7	2.28	1.00	1.28	56.14	0.802	0.303	4.224	0.01	S
B	9	2.22	0.88	1.34	60.36	0.706	0.235	5.702	0.001	H.S
C	9	2.00	0.77	1.23	61.50	0.831	0.277	4.440	0.01	S
D	9	2.22	1.55	0.67	30.18	0.498	0.166	4.036	0.01	S

4. Kshudhadhikya [Polyphagia]:

Table No. 5 Showing pattern of clinical improvement in polyphagia in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	7	2.28	0.85	1.43	62.71	0.786	0.297	4.814	0.01	S
B	8	2.25	1.25	1.00	44.44	0.534	0.189	5.291	0.01	S
C	6	2.33	1.33	1.00	42.91	0.774	0.317	3.154	0.05	Mi.S
D	9	2.11	1.44	0.67	31.75	0.706	0.235	2.851	0.1	N.S

5. Pindikodvestana [Cramps]:

Table No. 6 Showing pattern of clinical improvement in cramps in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	6	2.50	0.33	2.17	86.80	0.407	0.167	12.99	0.001	H.S
B	8	2.12	0.75	1.37	64.62	0.521	0.185	7.405	0.001	H.S
C	7	2.42	0.85	1.57	64.87	0.533	0.202	7.772	0.001	H.S
D	7	2.14	0.85	1.29	60.28	1.111	0.420	3.071	0.05	Mi.S

6. Ati Sweda [Excessive sweating]:

Table No. 7 Showing pattern of clinical improvement in excessive sweating in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	6	2.16	1.16	1.00	46.29	0.632	0.259	3.861	0.05	Mi.S
B	5	2.2	1.0	1.2	54.54	0.836	0.375	3.200	0.05	Mi.S
C	8	2.00	1.12	0.88	44.00	0.834	0.295	2.983	0.05	Mi.S
D	6	2.16	1.00	1.16	53.70	0.752	0.308	3.766	0.02	Mo.S

7. Karapada Daha [Burning sensation in hands and feet]:

Table No. 8 Showing pattern of clinical improvement in burning sensation in hands and feet in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	5	1.80	0.60	1.20	66.66	0.447	0.200	6.000	0.01	S
B	6	2.16	0.83	1.33	61.57	0.515	0.211	6.303	0.01	S
C	7	2.00	1.14	0.86	43.00	0.688	0.260	3.307	0.02	Mo.S
D	6	2.33	1.16	1.17	50.21	0.404	0.165	7.090	0.001	H.S

8. Daurbalya [Weakness]:

Table No. 9 Showing pattern of clinical improvement in weakness in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	T	p	Results
		BT	AT	X						
A	10	1.80	1.00	0.80	44.44	0.578	0.183	4.371	0.01	S
B	9	1.88	1.00	0.88	46.80	0.600	0.200	4.400	0.01	S
C	10	1.70	0.70	1.00	58.82	0.816	0.258	3.875	0.01	S
D	7	2.42	0.57	1.85	76.80	0.689	0.261	7.088	0.001	H.S

9. Atinidra [Excessive sleep]:

Table No. 10 Showing pattern of clinical improvement in excessive sleep in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	t	p	Results
		BT	AT	X						
A	4	2.75	0.50	2.25	81.81	0.499	0.249	9.036	0.01	S
B	6	2.66	0.66	2.00	75.81	0.632	0.259	7.722	0.001	H.S
C	3	2.33	1.00	1.33	57.08	0.576	0.333	3.993	0.1	N.S
D	7	2.28	1.28	1.00	43.85	0.577	0.218	4.587	0.01	S

10. Alasya [Laziness]:

Table No. 11 Showing pattern of clinical improvement in laziness in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	t	p	Results
		BT	AT	X						
A	8	2.00	0.37	1.63	81.50	0.516	0.183	8.907	0.001	H.S
B	9	2.00	0.44	1.56	78.00	0.725	0.241	6.473	0.001	H.S
C	8	2.12	0.87	1.25	58.96	0.462	0.163	7.668	0.001	H.S
D	7	2.00	0.85	1.15	57.50	0.832	0.315	3.650	0.02	Mo.S

11. F.B.S. [Fasting blood sugar]:

Table No. 12 Showing pattern of clinical improvement in fasting blood sugar in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	t	p	Results
		BT	AT	X						

A	10	2.70	0.60	2.10	77.77	0.737	0.233	9.012	0.001	H.S
B	10	2.40	0.80	1.60	66.66	0.699	0.221	7.239	0.001	H.S
C	10	2.10	1.00	1.10	52.38	0.737	0.233	4.291	0.01	S
D	10	2.90	0.50	2.40	82.75	0.699	0.221	10.859	0.001	H.S

12. P.P.B.S. [Post prandial blood sugar]:

Table No. 13 Showing pattern of clinical improvement in post prandial blood sugar in patient of all the four groups

Group	n	Mean			Relief %	S.D. (±)	S.E. (±)	t	p	Re-sults
		BT	AT	X						
A	10	2.30	0.60	1.70	73.91	0.483	0.152	11.182	0.001	H.S
B	10	2.20	0.70	1.50	68.18	0.527	0.166	9.036	0.001	H.S
C	10	2.50	1.30	1.20	48.00	0.632	0.200	6.000	0.001	H.S
D	10	2.80	0.60	2.20	78.57	0.632	0.200	11.000	0.001	H.S

Marked relief was observed in Pindikodvestana (86.80%), Atinidra (81.81%), Alasya (81.50%), and F.B.S. (77.77%) in Group A; Atinidra (75.81%) and Alasya (78.00%) in Group B, while Group D shows marked relief in Daurbalya (76.80%), F.B.S. (82.75%) and P.P.B.S. (78.57%). Patients do not obtain marked relief in any symptom in Group C.

DISCUSSION

Madhumeha is a disease in which the patient voids excessive quantity of urine having concordance with *Madhu* i.e. of *Kashaya* and *Madhura* taste, *Ruksha* texture and honey like color. In *Madhumeha*, mainly the *Vata* and *Kapha* are predominant though the disease is *Tridoshaj*. The *Vata* may be provoked either directly by its etiological factors or by the *Avarana* of its path by *Kapha*, *Pitta* or other *Dushyas*. *Acharya Vagbhata* has classified the *Madhumeha* into two categories i.e. *Dhatukshanajanya Madhumeha* and *Avarnajanya Madhumeha*. Type I Diabetes mellitus is nearer to *Dhatuakshanajanya Madhumeha* while type II Diabetes mellitus resembles to *Avaranajanya Madhumeha*.^[6]

On comparing the effect of therapies, *Shankha prakshalana* along with asana and Spico kalp proved more effective to control *Prabhuta mutrata*, *Avil mutrata*, *Kshudhadhikya*, *Pindikodvestana*, *Karapada daha*, *Atinidra* and *Alasya*. *Shankha prakshalana* along with Spico kalp proved more effective to control *Ati Sweda*. Only Spico kalp is more effective to control *pipasadhika*, while modern medicine proved better in controlling of *Daurbalya*, *F.B.S.* and

P.P.B.S.

Marked Improvement was observed in 20% patients in Group A and 10% patients in Group B & D. Moderate Improvement were observed in 80% patients among all groups. Mild Improvement was observed in 20% patients in Group C and 10% patients in Group B & D. No one was observed to have Improvement / Controlled or No response towards therapy in any group. *Shankha prakshalana* is one of the purifactory processes among *Shatkarma* of *Yoga*. This therapy is indicated in many diseases including 20 types of *Prameha* as well as *Madhumeha*. The factors, which help in pacification of *Madhumeha* through *Shankha prakshalana*, may be as follow-

- It is a purifactory process of the body including Gastro-intestinal tract, thus it eliminates vitiated *dosha* along with mala, from the body. It eliminates *vata* by *pakwashaya shuddhi*, *pitta* by *pachyamanashya shuddhi* and *kapha* by *amashya shuddhi*. *Kapha* and *pitta* is also eliminating by *Kunjil*, which is perform as *pashchata karma* of *Shankha prakshalana*. Hence it brings normalcy of *Tridosha*.
- It brings balance between the *Dosha - dhatu* and *mala*.

- It helps in normalizing the *Jatharagni*, which results in normalcy of *Dhatwagni*.
- Balanced state of *agni* makes substratum suitable for the drug and balanced condition of *Dhatwagni* prevents *dhatu* depletion & *vata avarana*.
- It evacuate excess amount of *kleda* or fluid along with stool, as a result fat metabolism is checked and hence undigested and unutilized fat will be excreted out.
- Performing of *Asana* during the process results in reducing of *Meda* (fat).
- *Asana*, during the process, activate peristalsis, sphincters or valves, muscles and nerves of the digestive tract. *Urdhahastasana* and *katichakrasana* acts mainly on stomach, small intestine and stretches the colon. *Udarakarshasana* squeeze and massage the coecum, sigmoid colon and rectum. *Udarakarshasana* and *Bhujangasana* stimulate the recto-sphincter reflex. In this way these *Asana* helps to create pressure and eliminates *mala* through anus.

Kapha-vata-kleda and *meda* are chief culprits in *Madhumeha*. *Shankha prakshalana* eliminates vitiated *kapha* and *vata Dosha* and reduces *kleda* and *meda*. *Mandagni*, *ama-dosha* and *medodhatwagni-mandya* plays an important role in pathogenesis of *Madhumeha*. *Shankha prakshalana* corrects the *agni* which pacifies *ama Dosha* and encounters *dhatwagni-mandya* & potentiates the weakened *dhatwagni* including *medodhatwagni*.

According to modern science, Diabetes mellitus is a metabolic disorder. *Shankha prakshalana* corrects the *Dhatwagni* which can be correlated to metabolism. Thus balancing the metabolism, it helps to cure Diabetes. Obesity is a major cause of Diabetes mellitus Type2. *Shankha prakshalana* reduces *meda* (fat), resulting in weight reduction. When there is reduction of weight then insulin resistance will be reduced

and as a result relative insulin deficiency will also be corrected. Thus this therapy helps in diminishing the insulin resistance by the reduction of weight and obviously it reduces the stress over beta cells of langerhans of pancreas and stimulates the pancreas. In this way, *Shankha prakshalana* is effective on the causative factors of *Madhumeha* and checks the pathogenesis of the disease. Now it is proved that all the spices help in activating the secretion of various digestive enzymes and hormones which helps in proper digestion and metabolism.^[7] Spices like *Tejpatra* may also stimulate directly or indirectly the b-cells of pancreas for proper insulin secretion and have hypoglycaemic effects^[8]

Fenu greek seeds contain the unique major free amino acid 4 - hydroxy isoleucine (4-OH - 11e) which has been characterized as one of the active ingredients in fenu greek for blood glucose control^[9]. Effect of Spico-kalp on *Madhumeha* may be as follows:

Dosha: *Kapha* and *vata dosha* takes place in the pathogenesis of *Madhumeha*. Most of the contents of Spico-kalp are having *kapha-vata hara* action by virtue of its *Ushna virya*, thus it encounters *kapha* and *vata dosha*. *Kapha hara* action is also achieved by its dominance of *katu & tikta rasa* and *laghu-ruksha guna*.

Dushya: *Meda* and *kleda* are the chief culprits in *Madhumeha*. *Spico kalp* performs *medokledopa-shoshana* action due to *katu & tikta rasa* and dominance of *ruksha guna*. *Ushna virya* also helps in *kleda and meda vilayana* action.

Agni and Ama Dosha: Most of the contents of Spico-kalp are having *deepana*, *pachana* and *anulomana* properties by virtue of *katu* and *tikta rasa* and *ushna virya*. Thus it increases *Agni* and helps in *amapachana* thereby alleviates *aparipakwa* and *ama dhatu*. *Katu rasa* and *ushna virya* also encounters *dhatwagnimandya* and potentiates the weakened *dhatwagni*.

Srotas: Due to *katu rasa*, Spico kalp dilated all the involved channels i.e. "Srotansi vivrunoti action". *Katu rasa* and *ushna virya* checks over *medovaha* and *mamsavaha srotodushti*. *Haridra* with its *mutrasangrahani* action does *basti vishodhana* by cleansing the *basti*, thereby alleviates *mutravaha srotodushti*.

Rupa:

1. *Prabhuta mutrata* is the predominant symptom of the aforesaid ailment. *Tikta rasa* combats this symptom due to its *mutra shoshana* action. *Haridra* also encounters this symptom due to its *mutrasangrahani* property.
2. *Ati sweda* is also a symptom in *Madhumeha*. *Tikta rasa* performs *sweda shoshana* action thus causes relief in excessive sweating.
3. *Pipasa* is another symptom of the disease. *Tikta rasa* is helpful to minimize this symptom by virtue of *Trishna shamana* action. *Darushita*, *lavanga*, *shunthi* are also having *trishahara* properties.
4. Depletion of *ojas* and *daurbalya* is also noted in the disease. *Darusita* have *ojovardhaka* action, thereby encounters the *ojas kshaya* and maintain the status of *ojabala*, which result in alleviation of weakness in the patients, as *ojas* is consider as *prakrita bala*.

Roga: *Haridra* and *Meetha Neem* both are mentioned as *Pramehahara*

CONCLUSIONS

- Major etiological factors of *Madhumeha* are *kapha*, *meda* and *mutravardhaka ahara-vihara*. *Vata* and *kapha* are the chief culprits. Tendency towards sedentary life style and faulty dietary habits leads to vitiation of *kapha* and *meda*, leading to *Madhumeha*. Urbanization also plays the role in the enhancement of the disease.
- Treatment modalities should based upon the consideration of vitiated *Kapha*, *Vata* and *Meda* having

properties like *Kaphavatahara*, *Shlesamamedohara* and *Pramehaghna*.

- Regular practice of *Shankha prakshalana* & *Asana* does reduce blood sugar levels, the blood pressure, weight, the rate of progression to the complications, and the severity of the complications as well. The symptoms are also reduced to a great extent.
- Spico kalp is also cost effective and is easy to prepare at home because its ingredients, spices, are available in Indian kitchens.
- Side effects like acidity, burning sensation in urine is noted in some patients which may due to *ushna virya* of Spico kalp.

The critical analysis of total effect of therapies reveals that administration of *Shankha prakshalana* along with *asana* and Spico kalp proved more effective to control the disease as compared to *Shankha prakshalana* along with Spico kalp without performing *Asana* or taking only Spico kalp. While modern medicine, which is already established, proved a little more effective to control the blood sugar levels (i.e. 4.98% more in F.B.S. and 4.66% more in P.P.B.S.), as compared to *Shankha prakshalana* along with *asana* and Spico kalp. Thus, it can be concluded that the *Shankha prakshalana* along with *Asana* and Spico kalp is effective in the management of *Madhumeha* as it is safe, cost effective and free from any side effects.

REFERENCES

1. Mohan V, Sandeep S, Deepa R, Shah B, Varghese C. Epidemiology of type 2 diabetes: Indian scenario. *Indian J Med Res* 2007;125:217-30.
2. G. Talwarkar Pradeep, Practical Diabetes Mellitus, Indegene Lifestyle Pvt. Ltd; 2006;10-12.
3. Williams Textbook of Endocrinology (12th ed) Philadelphia:Elsevier/saunders pp.1371-1435.ISBN978-1-4377-0324-5.
4. Agnivesha, Charak, Dridhabala,

- Charak Samhita, Sutra Sthana, Vegadharaniya adhyaya 17/ 80 edited by Prof. Priyavrat Sharma, 9th edition, Varanasi, Chowkhamba Orientalia, 2005;121
5. Agnivesha, Charak, Dridhabala, Charak Samhita, Nidan Sthana, prameh nidan adhyaya 17/ 80 edited by Prof. Priyavrat Sharma, 9th edition Varanasi, Chowkhamba orientalia,2005;269,270.
 6. Sharma Bhawana, Goyal Dinesh Kumar. A Comparative Clinical Evaluation of the Efficacy of Madhumeha Nashini Gutika & Darvyadi Kwath in Madhumeha w.s.r. to Diabetes Mellitus. International Journal of Ayurveda and Pharma Research. 2015;3(8):11-18.
 7. J.Reman, N.K.Leela, B.Krishnamoorthy and P.A.Mathew. Chemical composition of Cinnamomum tamala essential oil-a review. Journal of Medicinal and Aromatic Plant Sciences 27(2005) 515-519
 8. Sharma SR, Dwivedi SK, Swarup D. 1996. Hypoglycaemic and hypolipidemic effects of Cinnamomum tamala Nees. Leaves. Indian Journal Experimental Biology 34: 372-374.
 9. Vijay Chaudhary, Sharad Johri, Ashwani Kumar Rana. Evaluation of Comparative Efficacy of Neelkanthi (Ajuga Bracteosa), Tejapatra (Cinnamomum Tamala) and Methika Beeja (Trigonella Foenum Graecum) Churna in the Management of Diabetes Mellitus. Int. J. Ayur. Pharma Research. 2015;3(2):80-85.

CORRESPONDING AUHTOR

Dr.(Mrs) Gunjan Garg

Associate Professor

Dept. of Swasthavritta & Yoga

Mahatma Jyotiba Fule Ayurveda Mahavidhalaya

Chomu , Jaipur ,India

Email- ayurvedshala@gmail.com

Source of support: National Institute of Ayurveda, Jaipur (India) ,

Conflict of interest: None Declared

How to cite this URL: Dr. Gunjan Garg . A Comparative Study Of *Yogic Karma (Shankha-Prakshalana & Asana)* And Spico-Kalp In The Management Of *Madhumeha* (D.M. Type2). International Ayurvedic medical Journal {online} 2016 {cited 2016 May} Available from: http://www.iamj.in/posts/images/upload/918_928.pdf