

A CASE REPORT: MANAGEMENT OF MADHUMEHA (TYPE 2 DIABETES MELLITUS) WITH AYURVEDIC MEDICINES AND KAPALBHATI PRANAYAMA WITH SPECIAL REFERENCE TO HBA1C

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ABSTRACT

Background: Diabetes Mellitus is a metabolic disease mentioned as *madhumeha* in *Vatas Prameha* in Charak Samhita. According to WHO& ADA primary diagnostic criteria of diabetes is HbA1c greater than or equal to 6.5% & 5.7% respectively. This case report briefly describes the role of Ayurveda in the management of *prameha* signs & symptoms. Regular practice of *Kapalbhati pranayama* enhances *jatharagni* which results in improvement in overall metabolism of the body. Combination of Ayurveda medicines & yoga not only corrects signs & symptoms of *madhumeha* but also gradual decrease in the level of HbA1c. *Vasantakusumakar*, *Nisha-amalaki* along with *Chandraparabha vati* are the medicines used in this case & Regular practice of *Kapalbhati pranayama* for 6 months. Gradually Symptoms of Diabetes i.e. Tiredness, weakness, polyuriaetc. At the end of 6 months of treatment regimen Patient was completely free from above symptoms.

KEYWORDS: *Ayurveda, Prameha, Madhumeha, HbA1c, Kapalbhati*

Pranayama, Best ayurvedic consultant for diabetes, Dr. Hiteshwar Lonare –Diabetes reversal regimen.

INTRODUCTION

Diabetes Mellitus is a silent killer in today's era of pandemic. According to WHO Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves. About 422 million people over the globe have diabetes, the majority living in low and middle-income countries, and 1.6 million deaths are directly attributed to diabetes each year.^[1] Patients having Type 2 DM is further lands in Type 1 & more complication occurs like Diabetic neuropathy, nephropathy, retinopathy etc. As per Indian subcontinent ICMR states Symptoms of Diabetes Osmotic symptoms- polyuria, polydipsia, Weight loss despite polyphagia, Tiredness, weakness, Generalized pruritus, Recurrent urogenital infections, delayed healing of wounds. The word *Prameha* is consisting of 'Pra' & 'Meha' means Excess in quantity & frequency in urination. Ancient text of Ayurveda *Charak samhita* classified it into 4 *Vataj*, 6 *Pittaj* & 10 *Kafaj*. *Madhumeha* is one of the types of *Vataj* *Prameha*.

Causes of *Prameha* According to *Charak Samhita*

आस्यासुखंस्वप्नसुखंदधीनिग्राम्यौदकानूपरसाःपयांसि।

नवान्नपानंगुडवैकृतंचप्रमेहहेतुःकफकृच्छसर्वम्॥४॥^[2]

- *Aasya shuka* – Consumption as per individuals' determination,
- *Swapna Sukha*- Compulsion to the preference of deskbound lifestyle and excessive love to sleep habits.
- *Dadhi*- Excessive consumption of curds
- *Gramyaudakaaanupa rasa* – Soup of meat of tame and marine animals and animals from muddy land,
- *Payas*- Excess intake of milk and its products preparations,
- *Navanna* – Recently reaped grains
- *Nava pana*- Recently prepared fermented beverages,
- *udavaikrtam*- Arrangements of jaggery and All Kapha- increasing factors.

Prameha Samprapti – Pathogenesis:

मेदश्चमांसंचशरीरजंचक्लेदंकफोबस्तिगतंप्रदूष्य।
 करोतिमेहान्समुदीर्णमुष्णैस्तानेवपित्तंपरिदूष्यचापि॥५॥
 क्षीणेषुदोषेष्ववकृष्यबस्तौधातून्प्रमेहाननिलःकरोति।
 दोषोहिबस्तिंसमुपेत्यमूत्रंसन्दूष्यमेहाञ्जनयेद्यथास्वम्॥६॥^[3]

Kapha spoils *Medas* (fat tissue), *Mamsa* (muscle tissue) & *Kleda* (fluid) body situated in *Basti* (urinary tract) and creates different types of *meha*.

Similarly, increased *Pitta* due *ushna –tikshana gunas*, impairs those elements and causes different types of *Pittaja Prameha*.

When other 2 Doshas are in a relatively reduced, the provoked *Vata* draws tissue elements, i.e, *Ojas, Majja and Lasika* into the urinary tract and impairs them to origin the 3rd type of *Prameha (VatajaMeha)*. Different doshas having entered the urinary tract in vitiated conditions causes the respective type of *PraMeha*

Prameha Chikitsa Sutra – Line of treatment:

स्थूलःप्रमेहीबलवानिहैकःकृशस्तथैकःपरिदुर्बलश्च।
 सम्बृंहणंतत्रकृशस्यकार्यंसंशोधनंदोषबलाधिकस्य॥१५॥
 स्निग्धस्ययोगाविविधाःप्रयोज्याःकल्पोपदिष्टामलशोधनाय ।
 ऊर्ध्वतथाऽधश्चमलेऽपनीतेमेहेषुसन्तर्पणमेवकार्यम्॥१६॥
 गुल्मःक्षयोमेहनबस्तिशूलंमूत्रग्रहश्चाप्यपतर्पणेन।
 प्रमेहिणःस्युः, परितर्पणानिकार्याणितस्यप्रसमीक्ष्यवह्निम्॥१७॥^[4]

Patients of *Prameha* are divided into 2 types.

- 1) ***Sthula pramehi*** – Obese and Strong. They require *Shodhana* (Cleansing, purification treatment).
- 2) ***Krushapramehi*** – Feeble. They are given nutritious handling – *Brumhana* therapy.

In both scenario patient is directed *Snehana – oleation*. Then, *Vamana*, *Virechana* described in *Kalpa Sthana* are ordered. After Dosha is removed, the patient is administered *Santarpana* or nutritious treatment because *Apatarpana* (abstaining) therapy in this condition may cause *Gulma* (cystic tumor), *Kshaya* (COPD), *Meha* – chronic urinary tract ailment, *Bastishoola*– bladder discomfort, *Mutragraha* – urinary retention. So, based on *Agni* (digestive strength), *Prameha* patient must be given *Santarpana* (nutritious therapy), after *Shodhana*.

If the *Pramehi* who requires *Shodhana* or elimination therapy is not eligible for it, then he is given *Shamana* treatment (with oral medicines).

Case report

A 61-year-old female patient having full investigation of newly detected Diabetes Mellitus Type 2 came to our ayurvedic consultant. Detailed history was taken. She was having complaints of Tiredness, weakness, polyuria.

- **Aggravating factors**- As patient is retired person, she was having lack of exercise, sedentary lifestyle, more intake of sweets (*Madhur Rasaahikya*)
- **Past history**: No other past history was there.
- **Medical history**: Patient is having mild hypertension from last 5 years.
- Menopause occurred at the age of 51.
- **Current medication**: Tab Amlorin 5mg BD (Amlodipine)
- **Family history**: Father & mother both DM& HTN
- **Personal history**
 1. **Diet**: Non-Vegetarian
 2. **Appetite**: To a lesser extent from few months
 3. **Bowel**: Regular (once a day)
 4. **Micturition**: Polyuria, 7-8 times a day & 2-3 times at nighttime (*naktmutrata*)
 5. **Sleep**: Disturbed
 6. **Addiction**: tea 2-3 times/day
- **Occupational history**: Retired teacher hence sedentary lifestyle.
- **General examination**:
Vital data: Pulse: 82/min; R/R: 19/min; BP: 130/86mm of Hg; Temp: 97°F, Pallor: absent, Weight: 54kg, Height : 159cm

Blood investigation: Before treatment:**PROCESSED AT :****Thyrocare**D-37/1, TTC MIDC, Turbhe,
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REPORT**NAME** : ██████████ (61Y/F)**REF. BY** : SELF**TEST ASKED** : HEMOGRAM - 6 PART (DIFF), HBA**SAMPLE COLLECTED AT :**SHIVAJI WARD, SHUKRAWARI, BEHIND BUDDHA VIHAR,
NEAR SAKHARKAR HALL, TUNBAR ROAD, DISTRICT
BHANDARA

TEST NAME	TECHNOLOGY	VALUE	UNITS
HbA1c - (HPLC - NGSP Certified)			
HbA1c	H.P.L.C	7.9	%

Reference Range :

Below 6.0% - Normal Value
 6.0% - 7.0% - Good Control
 7.0% - 8.0% - Fair Control
 8.0% - 10% - Unsatisfactory Control
 Above 10% - Poor Control

Method : Fully Automated H.P.L.C. using Biorad Variant II Turbo, NGSP Certified.

AVERAGE BLOOD GLUCOSE (ABG)	CALCULATED	180	mg/dl
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Reference Range :

90 - 120 mg/dl : Excellent Control
 121 - 150 mg/dl : Good Control
 151 - 180 mg/dl : Average Control
 181 - 210 mg/dl : Action Suggested
 > 211 mg/dl : Panic Value

(Note: Average Blood Glucose value is calculated from HBA1c value and it indicates Average Blood Sugar level over past three months.)

Method : Derived from HBA1c values**Please correlate with clinical conditions.**

Sample Collected on (SCT) : 30 Jan 2019 09:30
Sample Received on (SRT) : 31 Jan 2019 02:03
Report Released on (RRT) : 31 Jan 2019 05:48
Sample Type : EDTA
Labcode : 3001047844/MS025
Barcode : I8403407

Dr. Prachi Sinkar MD(Path)

Dr. Caesar Sengupta MD(Micro)

Page : 9 of 12

Fig. 1: HbA1c & ABG Blood Investigation before Treatment.

Therapeutic intervention

Table no. 1: Ayurvedic medicines.

Sr. No.	Drug	Latin Name	Reference Book	Dose	Root of Administration	Duration
1	<i>Nisha (Haridra) Churna</i>	Curcuma Longa	<i>Charak Samhita</i>	1.5gram <i>Rasayan kale</i> (Early Morning Empty Stomach) with lukewarm water	Orally	6months
2	<i>Amalaki</i>	Emblica officinalis	<i>Charak Samhita</i>	1.5gram <i>Rasayan kale</i> (Early Morning Empty Stomach) with lukewarm water	Orally	6months
3	<i>Vasantaku sumakar</i>	NA	<i>Bharat Bhaishjya Ratnakar Vol-4</i>	A tablet 250gram <i>Rasayan kale</i> (Early Morning Empty Stomach) with lukewarm water	Orally	6months
4	<i>Chandraprabha Vati</i>	NA	<i>Bharat Bhaishjya Ratnakar Vol-2</i>	Two tablets 250gram after lunch & Dinner (<i>Vynodane</i>)	Orally	6months

Table no. 2: Yoga: Pranayama regimen.

Sr. No.	Name of Pranayama/Asana	Time of Administration	Duration
1	<i>Kapalbhati Pranayama</i>	Early in the morning 20 minutes after taking of medicines	Daily 10 minutes for 6 Months
2	<i>Shavasana</i>	Just after completion of <i>Kapalbhati Pranayama</i> (For Mental Relaxation)	Daily 10 minutes for 6 Months

Pathya-Apathyain prameha

संशोधनं नार्हतियः प्रमेही तस्य क्रिया संशमनी प्रयोज्या।

मन्थाः कषायाय वचूर्णलेहाः प्रमेहशान्त्यै लघवश्च भक्ष्याः ॥१८॥

ये विष्किराये प्रतुदा विहङ्गास्तेषां रसैर्जाङ्गलजैर्मनोजैः।

यवौदनं रूक्षमथापि वाट्यमद्यात्स सक्तूनपि चाप्यूपान् ॥१९॥


मुद्गादियूषैरथ तिक्तशार्कैः पुराणशाल्योदनमाददीत।

दन्तीङ्गुदीतैलयुतं प्रमेही तथाऽतसी सर्षपतैलयुक्तम् ॥२०॥^[5]

Table no. 3: *Pathya-Apathya*.


Do's	Don'ts
<ul style="list-style-type: none"> ○ <i>Shigru</i> - drumstick ○ <i>Haridra</i> – turmeric ○ <i>Amalaki</i> – goose berry ○ <i>Shyamaka</i> – <i>Setaria italica</i> (L.) ○ Kodrava – <i>Echinochloa frumentacea</i> Linn. ○ Yava – barley ○ Godhuma – wheat ○ Mudga – green gram ○ Kulattha – horse gram ○ Patola – snake gourd ○ Karavellaka – bitter gourd ○ Maricha – pepper ○ Lashuna – garlic ○ Jambu – blue berry ○ Vyayama – exercise ○ Barley 	<ul style="list-style-type: none"> ○ <i>Kanda moola</i> (root-rhizome) ○ <i>Ikshu</i> (sugar cane juice) ○ <i>Taila</i> (oil) ○ <i>Ghrita</i> (ghee) ○ <i>Guda</i> (jaggery) ○ <i>Kanjika/shukta</i> (sour gruel) ○ <i>Madya</i> (alcohol) ○ <i>Pishtanna</i> (carbohydrate rich food) ○ <i>Anupamamsa</i> (animals of marshy land) ○ <i>Dadhi</i> (curd) ○ <i>Navanna</i> (new grains) ○ <i>Divaswapna</i> (day sleep) etc^[6]


Blood investigation after treatment



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Pathana Shree
FMR HONORARY PHYSICIAN TO THE PRESIDENT OF INDIA


 Dr. Vandana Lal
 M.D (PATH), IFCAP
Chief of Pathology
SHRI RAMJI AWARD WINNER

Name :		Collected :	23/6/2019 11:14:00AM
Lab No. :	252413852	Received :	23/6/2019 11:31:18AM
Age :	62 Years	Reported :	24/6/2019 1:09:00PM
Gender :	Female	Report Status :	Final
A/c Status :	P	Ref By :	Dr. SELF

Test Name	Results	Units	Bio. Ref. Interval
HbA1c (GLYCOSYLATED HEMOGLOBIN), BLOOD (HPLC)			
HbA1c	5.4	%	
Estimated average glucose (eAG)	108	mg/dL	

Interpretation

As per American Diabetes Association (ADA)	
Reference Group	HbA1c in %
Non diabetic adults >=18 years	4.0 - 5.6
At risk (Prediabetes)	5.7 - 6.4
Diagnosing Diabetes	>= 6.5
Therapeutic goals for glycemic control	. Goal of therapy: < 7.0 . Action suggested: > 8.0

Note

1. Since HbA1c reflects long term fluctuations in the blood glucose concentration, a diabetic patient who is recently under good control may still have a high concentration of HbA1c. Converse is true for a diabetic previously under good control but now poorly controlled
2. Target goals of < 7.0 % may be beneficial in patients with short duration of diabetes, long life expectancy and no significant cardiovascular disease. In patients with significant complications of diabetes, limited life expectancy or extensive co-morbid conditions, targeting a goal of < 7.0 % may not be appropriate
3. Any condition that shortens erythrocyte survival such as sickle cell disease, pregnancy (second and third trimesters), hemodialysis, recent blood loss or transfusion, or erythropoietin will falsely lower HbA1c results regardless of the assay method
4. In patients with HbA1c level between 7-8%, Glycemark (1,5 Anhydroglucitol) test may be done to identify those with more frequent and extreme hyperglycemic excursions



Page 5 of 11

If test results are alarming or unexpected, Client is advised to contact the laboratory immediately for possible remedial action.
 @ Tests conducted at National Reference Lab, New Delhi, a CAP [7171001], ISO [FS 60411] and NABL [M-0061] accredited laboratory

Fig. 2: HbA1c & ABG Blood Investigation after Treatment.

RESULTS

Table no. 4: Blood investigation.

Blood Investigation	Date of Collection of Blood Sample	Date of Report of blood Investigation	HbA1c (In %)	ABG (In mg/dl)
Before Treatment	30.01.2019	31.01.2019	7.9	180
After Treatment	23.06.2019	24.06.2019	5.4	108

Symptoms of Type 2 DM -i.e., Tiredness, weakness and polyuria are not seen after the completion of ayurvedic treatment & regular practice of *Kapalbhati Pranayama*.

DISCUSSION

Jatharagni plays important role in the metabolism. *Kapalbhati Pranayama* & Ayurvedic medicines.

- **Nisha - Haridra:** *Rasa* (taste) – *Tikta* (bitter), *Katu* (pungent) *Guna* (qualities) – *Rooksha* (dryness), *Laghu* (lightness) *Vipaka* – *Katu* – undergoes pungent taste conversion after digestion.

Veerya – *Ushna* – Hot potency Effect on *Tridosha* – because of its hotness, it balances *Vata* and *Kapha*. Because of its dryness, pungent and bitter taste, it balances *Kapha*. Due to bitterness, it balances *Pitta*. Hence it balances all the three *Doshas*.^[7]

- **Amalaki:** *Guna* (qualities) – *Guru* – heaviness, *Sheeta* – coolant *Rasa* (taste) – Has five tastes. – Sour, sweet, bitter, astringent, and pungent (All the five tastes, excluding salt). Sour is dominant taste.

Vipaka (taste conversion after digestion): *Madhura* (sweet) *Veerya* (potency): *Sheeta* (cold)^[8]

Effect on *tridosha*: *Tridosha*hara – It balances all the three *Doshas*.

- **Vasantakusumakar ras:** Useful in *Mutratisar*, *Prameha*, *Mootraghata*, *trishna*, *daha*, *talushosh*, *ajirna*, *jwar*, *swash*, *Kshay*, *Krushata* etc diseases mentioned in *Bharat Baishajya Ratanakar* Vol 4^[9]
- **Chandraprabha vati:** It is specially indicated in all types of *Prameha*^[10] *Nisha-Amlaki* Yoga, *Vasantakusumakar Ras*, *Chandraprabha Vati* improves metabolism of Glucose. Above regimen not only balances *tridosha* but also corrects biochemistry. In this patient as *bala* was less *Shaman Chikitsa* administered. After regular practice of *pranayama* level of HbA1c gradually decrease & Symptoms also completely cured.

CONCLUSION

This single case report concludes that Ayurvedic management with *Nisha-Amlaki Yoga*, *Vasantakusumakar Ras*, *Chandraprabha Vati* along with *Kapalbhati Pranayama* for 6 months offers excellent result in the treatment of *Madhumeha* (Type 2 Diabetes Mellitus). this protocol should be evaluated in more number of patients for its scientific validation.

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