

SIGNIFICANT POTENTIAL OF AYURVEDA IN HEREDITARY TYPE 2 DIABETES MELLITUS: A CASE ANALYSIS OF *KULAJA MADHUMEHA*

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ABSTRACT

Ayurveda grouped various types of diseases depending on so many factors like etiology, age, lifestyle, vitiation of *doshas* etc. Among them one is *Aadibala-pravritta* (*Kulaja*) which refers to hereditary or genetic. *Prameh* which is similar to diabetes mellitus can also develop due to heredity along with other etiological factors like unhealthy lifestyle, stress or any other environmental factors. This article is going to present a case of hereditary type 2 diabetes mellitus to a male patient of age 38 years which had been managed by *ayurvedic* treatment significantly. Prognosis of any *Aadibala-pravritta vyadhi* (hereditary diseases) is stated as *Asadhya* (no cure) but it can be manageable. But its management takes time to revert. By *Doshaja* type this case was of *Vataj prameh* which is difficult to manage. After *ayurvedic* treatment and lifestyle modification HbA_{1c} of this case shifted to good diabetic control (6.7 %) range from poor diabetic control range (8.3 %). To catch this significant result about 4 months of treatment had been taken.

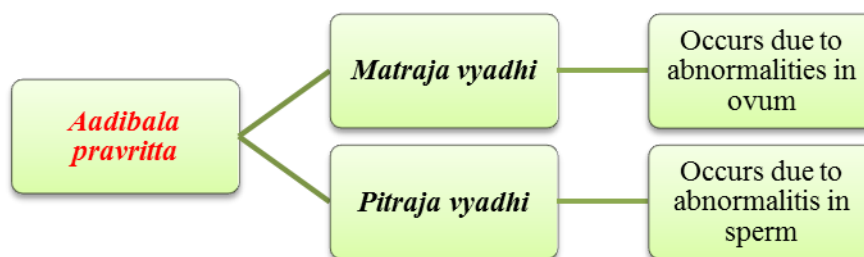
KEYWORDS: *Aadibala-pravritta*, *Prameh*, Hereditary type 2 diabetes mellitus, *Asadhya*, HbA_{1c}, Good diabetic control.

INTRODUCTION

Hereditary disorders are defined as genetic disorders that are passed down from parents to their offspring. These include diseases like cancers, leprosy, heart diseases etc. Among them one is hereditary diabetes. To have a close family member with type 2 diabetes like a parent or sibling significantly increases the possibility of developing the diabetes to a child. Even as genetics play a substantial role, lifestyle factors like diet, activities and body weight also significantly contribute to the occurrence of T2DM. It is the result of interaction between environmental factors and strong hereditary component. Estimates for the heritability of T2DM range from 20 to 80 %.^[1]

Ayurveda says any pain or trouble in the body manifests in the form of 7 different types of diseases like *Aadibalapravritta* (hereditary diseases), *Janmabalapravritta* (congenital diseases), *Kalabala*

prvaritta (age related diseases) etc. Among them one is *Aadibala-pravritta vyadhi* which refers to hereditary or genetic disorders which occurs due to *Beej doshas* that means abnormalities in sperm and ovum.^[2] This *Aadibalapravritta* term is referred by *Acharya Sushrut* and for same concept *Acharya Charak* used the term *Kulaja vyadhi*. *Sushrutacharya* included *Kushtha* (leprosy) and *Arsha* (piles) specifically as hereditary and mentioned some other diseases can be hereditary. *Prameh* is noted as hereditary disease by almost *Acharyas*. Terms used are like *Jataj prameh*, *Sahaja prameh* or *Kulaja prameh*. This article is proposing here an already diagnosed K/C/O type 2 DM. This case is of hereditary type as his father was diabetic. By *ayurvedic* perspective it is a case of *Kulaja madhumeha*. Depending on *Beej dosha* *Aadibalapravritta* or *Kulaja vyadhi* again classified into two subtypes.^[2]



Yet hereditary diseases are not curable but they can be manageable by modification in living standards along with application of *Ayurvedic* therapeutics. *Ayurveda* mentioned the different prognostic conditions of *Prameh*. *Acharya Charak*, *Sushrut* etc. mentioned the management of diabetic patient by various medicinal plants, lifestyle activities and healthy diet. All these concepts related to this case including of case report and *ayurvedic* treatment are arranged and presented from here onwards.

CASE REPORT

On 22 August 2024 a male patient with a K/C/O of type 2 Diabetes mellitus who was aging 38 years had visited to JEENA SIKHO LIFECARE LIMITED HOSPITAL, PRASHANT VIHAR, DELHI. He was complaining of –

- General weakness and
- Muscle pain since March 2024

His personal history including of addiction, diet pattern, past illness etc. and examination remarks were noted as given below.

Table no. 1: Personal history.

History of	Remark
K/C/O	T2 DM Since 5 years on allopathic medication
Past illness	Jaundice 2 year ago
Family history	Father diabetic
Diet pattern	Vegetarian
Addiction	Alcohol rarely
Occupation	Accountant

Table no. 2: General examination.

.	Observation
Height	5'11"
Weight	86 Kg
Age	38 years
BP	132/80 mm of Hg
Urine frequency	Normal 4-5 times a day

Table no. 3: Ashtavidh parikshana.

Assessment	Observation
Nadi (pulse)	Vata Kapha
Mala (bowel)	Normal
Mutra (urine)	Normal
Jivha (tongue)	Sama (coated) ++
Shabda (Pronunciation)	Normal
Sparsh (touch)	Normal
Drik (eyes)	Normal
Aakriti (physique)	Normal

Investigation: One and ½ month prior to visit hospital he was investigated for HbA_{1c} and it was 8.3 % on 06.07.2024 which was under poor control diabetic range. By keeping eye on this *ayurvedic* treatment had been started.

Diagnosis: It was already a K/C/O type 2 diabetes mellitus. After knowing his symptoms, taking proper

history and examining the patient, by *Ayurvedic* point of view this case diagnosed as *Pitraja Kulaja madhumeha* – a type of *Vataj prameh*. *Pitraja* is used in the sense of his father was diabetic.

AYURVEDIC INTERVENTION

Prameh chikitsa should include lifestyle modification along with oral medicines. Further when blood sugar

level will come within range of good diabetic control, alone lifestyle modification can be enough for management and to prevent reoccurrence of diabetes. Therefore treatment plan of this case was scheduled accordingly.

Oral medicines: Following courses of medicines were prescribed together with indications of use. For easy absorption and rapid efficacy of medicines *Koshna jala* (lukewarm water) was suggested to take after intake of

medicines. Liquid preparations were advised to take with equal quantity of lukewarm water. This concept is mentioned in *ayurvedic* contexts as *Anupaan* which refers to intake of advised liquid substance like lukewarm water, cold water, sugarcane juice, any decoction etc. along with or after intake of medicine.^[3, 4]

- **Course 1 (22.08.2024):** Given for 1 month from the day of consultation.

Table no. 4: Ayurvedic medicines – Course 1.

Formulations	Direction of use
Capsule DM –	1 capsule BD after food (<i>Adhobhakta</i>)
Tablet JS Diab –	1 tablet BD after food (<i>Adhobhakta</i>)
Tablet Chander vati –	1 tablet BD after food (<i>Adhobhakta</i>)
Syrup Madhumehanasak –	15 ml syrup BD before food (<i>Pragbhakta</i>)
Capsule Amlapittanasak –	1 capsule BD before food (<i>Pragbhakta</i>)
Tablet Bramhi vati –	2 tablet HS Before sleep (<i>Nishakala</i>)

- **Course 2 (29.09.2024):** Same medicines of course 1 were continued as mentioned in table no. 4. Because 3 days prior to first follow up visit he had investigated for HbA_{1c} which showed significant positive finding mentioned later in result section. Only the dose of Tablet *Bramhi vati* was reduced to 1 BD. Besides this one new medicine was added for pain relief and it was.

Tablet Go-Flexi: 1 BD after food (*Adhobhakta*)

- **Course 3 (22.02.2025):** He consumed medicines of course 2 irregularly for some reasons. After two and ½ months of prior HbA_{1c} he reinvestigated for it which did not show positive findings as significant as found in previous test. Therefore, he re consulted 5 months later of previous medicinal course. Medicines advised in this course are as follows.

Table no. 5: Ayurvedic medicines – Course 2.

Formulations	Direction of use
Capsule DM –	1 capsule BD after food (<i>Adhobhakta</i>)
Tablet JS Diab –	1 tablet BD after food (<i>Adhobhakta</i>)
Tablet Chander vati –	1 tablet BD after food (<i>Adhobhakta</i>)
Syrup Madhumehanasak –	15 ml syrup BD before food (<i>Pragbhakta</i>)
Tablet Bramhi vati –	2 tablet HS before sleep (<i>Nishakala</i>)
Tablet Dr. Immune –	1 tablet BD before food (<i>Pragbhakta</i>)

RESULTS

Symptomatic outcome

- Patient had complaints of general weakness and muscle pain on 1st day of treatment. This weakness relieved progressively in each course of medicines. After 4-5 month of treatment his general weakness subsided to almost.
- His muscle pain took more time to get relief. But after 2 months of treatment it showed significant relief in muscle pain.
- On the first day of consultation his tongue was found *Saam* (white coated) due to disturbed metabolism. But 1 month later to treatment his tongue found *Nirama* (clear tongue) and it was the sign of regularized metabolism.

HbA_{1c} outcome

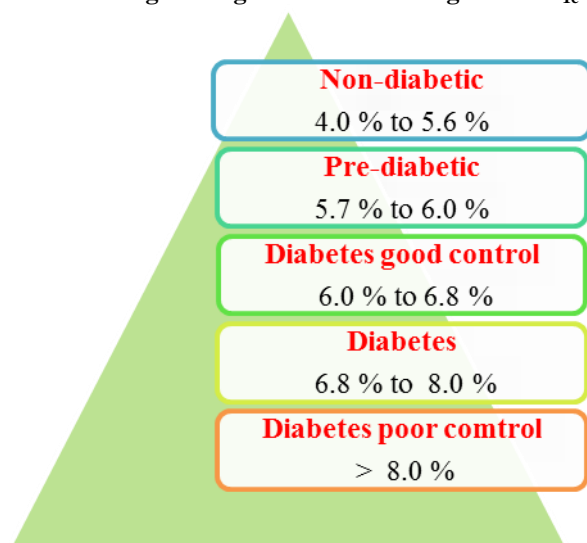
- 15 days prior to consultation his HbA_{1c} was detected 8.3 % which interprets poor control of diabetes (Chart no. 1: Biological reference range of HbA_{1c}).

- Almost after 1 month of treatment he was reinvestigated for HbA_{1c} to know about the effect of treatment. It was found that HbA_{1c} get reduced by more than 1% and shifted to 6.9 % which is between the range of diabetic HbA_{1c}.
- Again, *ayurvedic treatment* and healthy lifestyle continued till 3 months. Thereafter HbA_{1c} tested again which revealed 6.7 % of HbA_{1c}. It did not show more significance as compared to previous. But yet it comes under the range of good control diabetes from diabetes range. Reason behind this finding was that irregular intake of medicines by patient and difficult (no cure) prognosis of this case.
- After analyzing overall HbA_{1c} test the result collectively showed significant effect of *ayurvedic* treatment in shifting of HbA_{1c} from bad diabetic control to good diabetic control.
- As this is a case of *Vataj prameh* – subtype *Madhumeha* it would definitely take time to manage due to its bad and complicated prognosis.

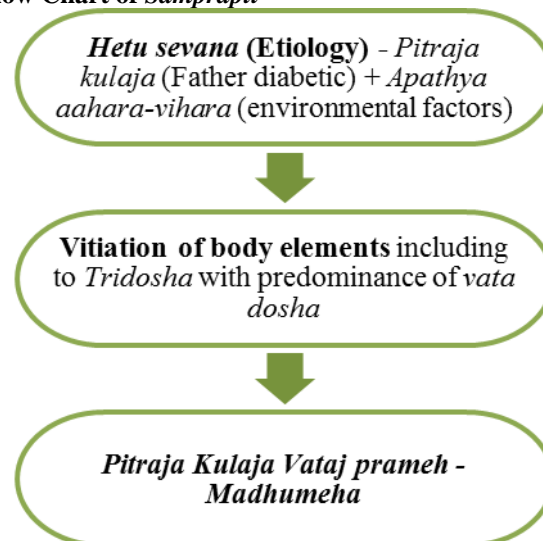
Table no. 6: HbA_{1c} Follow up.

Date	Treatment schedule Date	HbA _{1c}
06.07.2024	Before treatment	8.3 %
26.09.2024	After treatment of 1 month	6.9 %
18.12.2024	After treatment of 3 months of last follow up	6.7 %

Chart showing: Biological reference range of HbA_{1c} ^[5]



Flow Chart of *Samprapti*



DISCUSSION

Impairment in the metabolism of carbohydrates, fats and proteins is the main pathology in diabetes which leads to hyperglycemia. Hyperglycemia may be due to body cells cannot use blood glucose for their normal functioning or may be due to low insulin secretion by pancreatic beta cells.^[6] In *ayurveda* pathogenesis includes vitiation of multiple elements in the body like *Vata*, *Pitta*, *Kapha*, *Rasa*, *Rakta*, *Mansa*, *Majja*, *Oja*, *Lasika* and *Kleda*. It shows various pre-symptoms which are called as *Purvaroop* like over sweating (*Swedo*), feeling of heaviness (*Ghanangata*), burning and numbness in hands and legs etc.^[7,8] Consumption of etiological factors relating to diabetes will lead to vitiation of above-mentioned body elements. These element cause pathogenesis in the body and develops *Prameh*. Depending on the predominance of *Dosha* names are given. This case is of *Vataj prameh* with its subtype *Madhumeha*. It is the case of *Madhumeha* because *Madhumeha* is mentioned as caused by heredity or unhealthy lifestyle or both. Other types of *vataj prameh* are typically occurs due to unhealthy lifestyle.^[8,9] Pathogenic process happened in this patient relating to *Samprapti* of *Vataj prameh* is mentioned below in tree diagram –

Analysis of clinical feature of patient with contextual references

1. General weakness: It is termed as '*Dourbalya*' which means weakness and it is stated in *Upadrava* of *Prameh vyadhi* by *Charakacharya*.^[7] *Upadrava* is an *ayurvedic* term used for complications means secondary disease which caused due to primary existing disease or after its cure.^[10]
2. Muscle pain: This symptom is mentioned as '*Shoola*' in *Vataj prameh upadrva* by *Acharya Sushrut*^[9] and *Acharya Bhavmishra*.^[11] Pain or *Shoola* can be anywhere in the whole body, like in muscles, joints, lower limbs etc.

Ayurvedic Management

Basically, *Prameh* occurs due to predominant vitiation of *Kapha dosha* and *Medo dhatu*. But when along with *Kapha dosha* there is predominance of *Vata dosha* such as in *Vataj prameh* it becomes difficult to cure as it is *asadhya* (not curable). Because *Kapha dosha* and *Medo dhatu* treatment involves medicines of qualities opposite to their qualities like *Ruksha* (dry), *Katu* (astringent), *Tikta* (spicy) and *Kashaiya* (astringent) *rasa* (taste), *Laghu* (light to digest) etc. But these qualities of medicines would cause elevation of *Vata dosha*. Whereas *Vata dosha* pacification requires herbs which possess opposite properties like *Snigdha* (oily), *Guru* (heavy to digest), *Madhur* (sweet), *Amla* (Sour) and *Lavana* (Salt) *rasa*. These qualities are *Apathya* (unwholesome) for *Kapha dosha* and *Medo dhatu*. This condition is termed as *Viruddha-upkramtvata* (opposite treatment). Other condition is that, *Vataj prameh* involves loss of essential elements in the body like *Ojo dhatu* (nourishing element), *Lasika* (immunity providing

element) etc. and it is termed as *Mahatyativat*. Therefore, prognosis of *Vata prameh* is stated as *asadhya* that is not curable.^[8, 12] Going through detail study later he stated that if there is no loss of all body elements means severe immunity loss and urine does not shows drastic abnormalities in appearance (can be considered as altered KFT) then it can become *Yapya vyadhi* which refers to manageable diseases even it has no cure. These types of diseases need *Pathya sevana* (following of wholesome diet and activities). Disease can become severe even after less consumption of etiological factors.^[13]

Focus of management of Yapya vyadhi avastha (manageable disease condition):^[13] It is essential to manage these patients for the reasons like.

- To prevent further complications of the disease due to more *Dosha-Dushya* involvement (pathogenic factors).
- To give quality and long life to the patient.

Treatment of Vataj prameh includes

1. Snehan chikitsa – For pacification of *Vata dosha*. It includes oiling of internal body naturally. For this, formulations which include *Snidgha gunatmaka* (having oily qualities) medicinal plants, those formulations were prescribed. e.g. *Yashtimadhu* (*Glycerrhiza glabra*), *Pippali* (*Piper longum*), *Shunthi* (dried *Zingiber officinale*), *Marich* (*Piper nigrum*) etc.

Other than medicine he was advised to eat 1 TSF of cow ghee with meal as a natural source of oiling and it is healthy. Diet was also included eating of almonds, flaxseeds, walnuts etc natural resources of oil.

2. Sanshaman chikitsa – For pacification of other pathogenic factors including *Kapha dosha* and *Medo dhatu*. Below mentioned formulations like Tablet JS Diab, *Madhumehanasnak* syrup, Capsule DM was used for pacification of pathogenic factors involved in diabetes.

Santarpana yoga: Acharya Charak mentioned this specific yoga for the nourishment of diabetic patient which includes *Aamalki* (*Emblica officinalis*), *Bibhitak* (*Terminalia bellerica*) and *Haritaki* (*Terminalia chebula*). These medicinal plants are ingredients of *Chander vati* and Cap *Amlapittanashak*.

3. Santarpana chikitsa – It includes nourishing patient's mental and physical health to boost immunity and to prevent further loss of immunity. Formulations of this treatment was *Bramhi vati* for mental health and Dr. Immune tablet given as physical immunity booster. This treatment also helps to relieve pain, if any, by elevating strength of body and reducing blood sugar level. For muscle pain presented in the patient Capsule Go-Flexi was advised along with capsule DM.

Shuddh Shilajit (purified Asphaltum): It is best recommended for its *Rasayan* property means immunity

booster or tonic. It works as anti-diabetic by pacifying *Kapha dosha* and *Medo dhatu*.^[14]

4. Pachan chikitsa – It means regulation of digestion and metabolism by regulating *Pitta dosha*. This treatment was performed by giving *Amlapittanashak* Cap.

Prescribed formulations and their indications

Capsule DM

Composition: *Aamragandhi Haridra* (*Curcuma amada*), *Guduchi* (*Tinospora cordifolia*), *Methika* (*Trigonella foenum*), *Shwet moosli* (*Chlorophytum borivilianum*), *Nimba* (*Azadirachta indica*), *Karvellak* (*Momordica charantia*), *Jambu* (*Syzygium cumini*), *Bilva patra* (*Aegle marmelos leaves*), *Gudmar* (*Gymnema sylvestre*), *Sheelajit* (*Asphaltum*)

Efficacy: all types of diabetes and all diabetic complications.

Chander vati

Composition: *Kapoor Kachri* (*Hedychium spicatum*), *Vacha* (*Acorus calamus*), *Kalmegh* (*Andrographis paniculata*), *Guduchi* (*Tinospora cordifolia*), *Devdaru* (*Cidrus deodara*), *Haridra* (*Curcuma longa*), *Ativisha* (*Aconitum heterophyllum*), *Daruharidra* (*Berberis aristata*), *Pippali mool* (Root of *Piper longum*), *Chitrak* (*Plumbago zeylanicum*), *Dhanyak* (*Coriandrum sativum*), *Haritaki* (*Terminalia chebula*), *Bibhitak* (*Terminalia bellirica*), *Amalki* (*Emblica officinalis*), *Chavya* (*Piper retrofractum*), *Vidang* (*Embelia ribes*), *Pippali* (*Piper longum*), *Marich* (*Piper nigrum*), *Shunthi* (*Zingiber officinale*), *Gaj pippali* (*Scindapsus officinalis*), *Swarna makshik bhasm*, *sajjikshar*, *saindhav* (rock salt), *krishna lavan* (black salt), *Laghu ela* (*Elettaria cardamomum*), *Twak* (*Cinnamomum zeylanicum*), *Patra* (*Cinnamomum tamala*), *Danti* (*Baliospermum montanum*), *Trivrutt* (*Operculina turpethum*), *Vanshlochan* (*Bambusa arundinacea*), *Loh bhasm*, *Shilajeet* (*Asphaltum*), *Guggul* (*Commiphora mukul*).

Efficacy: Diuretic, kidney dysfunction, UTI, CKD, stone, urine retention, anti-diabetic activity.

Cap. Amlapitta nashak

Composition: *Yashtimadhu* (*Glycerriza glabra*), *Pudina* (Mint leaves), *Hingu* (*ferula asfoetida*), *Chitrak* (*Plumbago zeylanica*), *Jeerak* (*Cuminum cyminum*), *Vidang* (*Embelia ribes*), *Ajmoda* (*Apium graveolens*), *Marich* (*Piper nigrum*), *Pippali* (*Piper longum*), *Shunthi* (*Zingiber officinale*), *Aamalki* (*Emblica officinalis*), *Bibhitak* (*Terminalia bellirica*), *Haritaki* (*Terminalia chebula*), *Shankh bhasm*.

Bhavna dravyas - *Yashtimadhu* (*Glycerriza glabra*), *Vidang* (*Embelia ribes*), *Marich* (*Piper nigrum*), *Shunthi* (*Zinziber officinale*), *Lavang* (*Syzygium aromaticum*).

Efficacy: Indigestion, acidity, abdominal discomfort, nausea, vomiting.

Capsule GO flexi

Composition: *Paneer dodi* (*Withania coagulans*), *Ashwagandha* (*Withania somnifera*), *Aamalki rasayan* (Tonic made up of *Emblica officinalis*), *Yograj guggul* powder (Ayurvedic formulation mainly contains *Commiphora mukul*), *Methika* (*Trigonella foenum*), *Shankh bhasm*, *Gokshur* (*Tribulus terrestris*), *Punarnava* (*Boerhaavia diffusa*), *Nirgundi* (*Vitex nigundo*), *Haridra* (*Curcuma longa*), *Nimba* (*Azadirachta indica*).

Efficacy: Analgesic, anti-inflammatory, immunity booster and pain killer.

Madhumehanashtak syrup

Composition: *Karvellak* (*Momordica charantia*), *Jambu* (*Syzigium cumini*), *Nimba* (*Azadirachta indica*), *Kirattikta* (*Swertia chirayta*), *Gudmar* (*Gymnema sylvestri*), *Kutaj* (*Holarrhena antidysenterica*).

Efficacy: Diabetes mellitus, Diabetes neuropathy, Retinopathy, Hyperglycemia.

Tablet JS Diab

Composition: *Karvellak* (*Momordica charantia*), *Gudmar* (*Gymnema sylvestri*), *Paneer dodi* (*Withania coagulans*), *Jambu* (*Syzigiumcumini*), *Methika* (*Trigonella foenum-graceum*), *Nimba* (*Azadirachta indica*), *Kalmegh* (*Andrographis paniculata*), *Bilva* (*Aegle marmelos*), *Mamajjak* (*Enicostema littorale*), *Guduchi* (*tinospora cordifolia*), *Yashad bhasm*, *Vang bhasm* (Tin ash).

Efficacy: Diabetes, diabetes neuropathy, retinopathy.

Bramhi vati

Composition: *Brahmi* (*Bacopa monnieri*), *Rassindur*, *Sheelajit* (purified Asphaltum), *Marich* (*Piper nigrum*), *Vidang* (*Embelia ribes*), *Pippali* (*Piper longum*), *Abhrak bhasm* (Ash of purified Mica), *Vang bhasm* (Ash of purified Tin).

Efficacy: Insomnia.

Dr. Immune tablet

Composition: *Kesar* (*Crocus sativus*), *Kuchala* (*Strychnos nux vomica*), *Ashwagandha* extract (*Withania somnifera*), *Shatavari* extract (*Asparagus racemosus*), *Pippali* (*Piper longum*), *Shunthi* (*Zingiber officinalis*), *Laghu ela* (*Elletaria cardamomum*), *Tulsi* (*Ocimum sanctum*), *Haridra* (*Curcuma longa*), *Lavang* (*Zeylanicum aromaticum*), *Loh bhasm* (Iron), *Swarna makshik bhasm*, *Shukti bhasm* (Conch shell ash), *Mukta bhasm* (Pearl ash).

Efficacy: Immunity booster, increases body strength.

Lifestyle Modification

- **DIP (Discipline and Intelligent) diet:** He was instructed to follow DIP diet plan. This diet plan is clinically proved as it has significant role in lifestyle disorders including diabetes.^[15]

This diet plan included.

1. **Fruits:** He was told to have all type of fruits including oranges, pomegranate, strawberries; apple etc. in the morning as breakfast. Amount of fruits was based on following formula.
2. **Salad:** Salad includes raw vegetables like cucumber, tomato, beetroot, cabbage; carrot etc. and was told to eat before lunch and dinner as PLATE 1. There after he had to eat meal of millet food.

Formula for quantity of fruit and salad as per DIP diet

Fruits: Patient s weight in Kg $\times 10$ = fruits in grams; for patient 860 grams of fruits.

Salad: Patient s weight in Kg $\times 5$ = salad in grams; for patient 430 grams of salad.

3. **Lunch and dinner:** It includes millet diet like barley, wheat, rice, sorghum etc grains. He was suggested to eat fresh and homemade food. Lunch and dinner should include barley or other millet *roti* (bread), *Mudga yusha* (Green gram soup), rice and all lentil and fruit vegetables. Lunch had to take around 1.00 pm and dinner had to complete before 7.30 pm.
4. **Afternoon:** About 90 grams of boiled sprouts or dry fruits were advised to eat by 4.00 pm if he feels hungry at this time.

- **Water intake:** Alkaline water that is *Shrutasheet jala* was advised to drink. It was prepared by boiling the water and then remains it to its half. He had to drink this water after cooling it to room temperature naturally. This water digests easily and best recommended in metabolic disorders.^[16] One thing specifically advised to drink as possible as less water because *Acharya Sushrut* and *Acharya Bhavmishra* stated to drink less or no water in *Madhumeha* or *Prameh*.^[17]

- **Yoga Asanas and Pranayam's:** Physical activities or regular exercise should be recommended in diabetes. But heavy exercise can trigger *Vataj prameh* by elevating *Vata dosha*. Therefore *Yogasana's* and *Pranayama's* which are not heavy to do were advised to practice in the morning. He was advised to do *Vajrasana*, *suryanamaskar* and *Kapalabhati pranayam*. *Vajrasana* detoxifies the body and regularizes metabolism. *Suryanamaskar* increases the strength of muscles and *Kapalbhati* increases the mental strength.^[18]

• **Daily regimens (*Pathya-apathy Aahar-Vihar*)**

1. Wake up early and go to sleep on time before 10.30 pm.
2. Eat anything after sunrise and before sunshine.
3. Follow appetite time and avoid fasting to prevent acidity.
4. Avoid junk food, fast food, packaged food and dairy and bakery products, refined products.
5. Avoid day sleeping after sunrise and avoid awakening at night.
6. Avoid sweet products and restrict salt intake.
7. Avoid alcohol and milk tea.

FURTHER SCOPE OF STUDY

- Awareness of hereditary diabetes can prevent the occurrence of diabetes in the offspring. Scope of study in that area is, to set-up an ideal protocol of diet plan and standard activities which can play a significant role as diabetes prevention. This study should be carried out in more number of sample sizes of same cases which can show average result.
- Other scope is to prevent diabetic complications because usual onset of hereditary diabetes occurs in young age before 40 years of age. Onset of diabetes in early age may lead to serious complications like heart diseases, renal disorders, stroke etc. in young age of patient. Therefore, in the long-standing cases of diabetes it is essential to shift management of diabetes from medicines to over lifestyle advancement. Because no one can take medicines for lifetime and it is not correct.
- In short the area of hereditary diabetes has a vast scope for lifestyle advancement both in diet and activities.

CONCLUSION

- Analysis of case concludes that hereditary diabetes and environmental factors can conjointly develop the diabetes in young age like in this patient onset of type 2 hereditary diabetes at the age of 33 years old.
- Observation of HbA_{1c} result concludes that *Vataj prameh* takes more time to manage due to its prognosis. Besides, this case is of *Kulaja prameh* which is *Asadhya* in its own (not curable). Therefore, *Vataj prameh* and *Kulaja prameh* requires more time and efforts to manage.
- Another conclusion of this study is that even a little consumption of etiological factors or irregular treatment even for a short duration can trigger the *Vataj prameh* rapidly due to its chronic condition and complicated pathogenesis. Irregular way of consumption of medicines by patient does not show significant result as expected by proper treatment.
- Imperative conclusion of this case is that, yet *Vataj prameh* and *Kulaja prameh* are mentioned as *asadhya* that is no cure, *management* of this case showed a significant potential of *ayurvedic* treatment in shifting the patient's HbA_{1c} (8.3%) from bad diabetic control over to good diabetic control (6.7%) within about 5 months. It also

showed symptomatic relief to about 90 %. But yet to bring the HbA_{1c} range within non-diabetic range and to prevent the reoccurrence of hyperglycemic condition, treatment and dietary recommendation was continued.

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