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Ayurvedic Management of Under Diagnosed Complication of Type -1 Diabetes Mellitus (Gastro Enteropathy): A Case Report

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ABSTRACT:

Diabetic Gastroenteropathy is a complication of long-standing diabetes that primarily affects the small and large intestines. It happens when chronic high blood sugar damages the autonomic nerves controlling the digestive tract it known as Autonomic neuropathy. This nerve damage disrupts the coordinated, wave-like muscle contractions needed to move food smoothly through the gut. Diarrhea, abdominal discomfort, bloating, Nausea and altered bowel habits are common complication due to Diabetic Gastroenteropathy. In the initial stage, *kapha, Meda*, and *Kleda* may be considered predominant in the pathogenesis of *Prameha.* Persistent metabolic disturbance may subsequently result in *Agni dushti* and impaired functioning of *Grahani.* With chronicity, *Vata prakopa* and disturbance of *Apana Vaya*, can affect intestinal motility and evacuation. In this case study a 44-year-old man presented to the *Kayachikitsa* OPD with the complaints of *Atisar* (loose motion-7-9times/night), *Udarshool* (abdominal discomfort), *Pindikodwestan* (Calf muscles Pain) and *Swasa* (Difficulty in breathing while climbing stairs) since 7-8 months. He had been diagnosed Type -1 Diabetes Mellitus 11yrs ago. Patient was admitted in *Kayachikitsa* IPD, for the treatment of complication associated with Diabetes. Patient was treated by *Grahi, Deepan, Pachan* and *Madhumehahar* Drugs. After 15 days of treatment improvement was observed in *Atisar* with a reduction in stool frequency to 1-2 times per night, along with relief from calf muscles pain and abdominal discomfort. Thereafter antidiabetic treatment for Type 1 Diabetes Mellitus was continued. After one-month moderate improvement was observed in FBS (Fasting Blood Sugar), and insulin dose was gradually tapered. The patient remained stable on the prescribed insulin regimen and continued the treatment for 3 months. This case report highlights the clinical presentation and Ayurvedic management of *Vataja Atisar* in a patient with diabetic gastroenteropathy and suggests the potential role of *Ayurvedic* management of complication Diabetes Mellitus.

KEYWORDS: Diarrhea, Diabetes Mellitus, Diabetic Gastro enteropathy, *Madhumeha, Vataj Atisar*.

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INTRODUCTION:

Prevalence of Diabetic Gastroenteropathy has not been established. Some reports mentioned a cumulative incidence of Diabetic enteropathy at 10yrs of 5.2% for patient with Type I DM and 1% for Patient Type-II DM.[1] According to Ayurveda *Madhumeha* is a subtype of *Vataj Prameh*. When *Kapha* and *Pitta doshas* are diminished by *Vata dosha*, the aggravated *Vata* drags essential bodily elements *Vasa* (fatty tissue), *Majja*(Bone marrow), *Ojas* (vital tissues) and *Lasika* (Lymph/fluids) into the *Mutrashaya*(urinary bladder). This process gives rise to *Vataja Prameha*.[2] In *Nidana Sthana* of *Charak Samhita* mentioned that *Ojomeha* is a *Madhumeha*.[3] In *Madhumeha* Urine becomes *Kashaya* (astringent), *Madhura*(sweet), *Pandu* (whitish yellow) and *Ruksha* due to depletion of *Ojas* (Vital tissues) leads bacterial growth and frequent urination.[4] In this case study chronic uncontrolled diabetes deteriorates into *Vataja Prameha*. Hyperactive, erratic nature of *Vata* damages the channels (*srotas*) of movement directly correlating to modern autonomic neuropathy. That can be understanding of diabetic enteropathy involves pan-enteric dysmotility, malabsorption, and altered gut microbiota and intestinal holding capacity is decreased leads to Diarrhea and others GI tract related symptoms. Diabetic enteropathy can be correlated with *Vataja Atisara* in this patient. [5] There is currently no cure for Diabetic enteropathy. The goals of treatment are to delay his progression of disease, relieve symptoms, control complications and restores normal function of GI Tract. [6]

CASE REPORT:

A 44 years young married male patient from a middle economic background was came in *kayachikitsa* OPD on 7th December 2024 with primary complaints of *Pindikodwestan* (Pain in calf muscles), *Atidravamala Pravriti*– 1time/Day and 7-8times/night (Diarrhea), *swasa* (difficulty in breathing – Grade 2), *Udarshool* (abdominal discomfort), *Adhman* (Gaseous distention), *Ubhayapadatala daha(*Burning sensation in both soles), *Mutra daha(Burning micturition)* and *Anidra*(Lack of sleep) for 7-8 months.

Primary concern and symptoms of the patients: -The patient k/c/o DM type-I since 11yrs. The patient was apparently normal 2 year back, then he gradually developed *Atidravamala Pravriti*–1time/Day and 7-8times/night (Diarrhea) and *Pindikodwestan* (Pain in calf muscles) since 7-8months. After taken some allopathic medicines subsites the symptoms but temporary relief. After 1 year same complains were found with other complains like *swasa* (difficulty in breathing – Grade 2), *Adhman* (Gaseous distention), *Ubhayapadatala daha (*Burning sensation in both soles, *Mutra daha (*Burning micturition*)* and *Anidra* (Insomnia) since 7-8months. Then patient came in *Kayachikitsa* OPD ITRA, Jamnagar and admitted for the treatment of these complaints.

Past history: Type -I DM since 11years**,** HBP- for 2 years and all medicines prescribed by concerned physician for

Diabetes Mellitus and Hypertension are continued during the treatment

Relevant past interventions with outcomes: - The patient had uncontrolled Diabetes. So, he was on Regular Basa log Refil solution for injection of Insulin units 8-8-8 after food, Enalapril maleate – 1 tablet in morning after food for hypertension. But due to sedentary life style and stress blood sugar was not controlled and was reached to diabetic complication mainly diarrhea, abdominal discomfort and gaseous distention so patient was taken Loperamide (Sos), Acerolas (Sos) for diarrhea. Loperamide -1tablet and Acerolas -1tablet when pt. had more frequency of Diarrhea for 6 months. But these symptoms were not subside after taken medicines he was admitted in *Ayurvedic* Hospital for the treatment of Diabetic Gastroenteropathy.

Family History: Mother- Type -I DM

Personal History: His diet included vegetarian food (Excessive intake of *Madhur, Katu Rasa*, curd, sugarcane juice, spice food, cold drinks, samosa, bread vada etc.). His appetite was *Pravar (Atikshudha*), ***Jaran Shakti***- *Avara* ***Kostha***- *Mridu*, **Sleep**:7-8hrs, **Exercise**-Nil, **Habit -** Pan Masala-Tobaco, ***Mala Pravriti***-1 time/day, 7-8times/night, ***Mutra Pravriti***- 08-10 times/Day, 1-2times/Night

Clinical findings: -The patient was moderately built and nourished, with a Height of 175cm, a weight of 65Kg and a BMI of 21.2kg/m^2. He had vital signs, Pulse-72beats/min, respiratory rate 24times/min., Blood pressure 140/90mmHg and Temperature: - 98.6^0 F. Examination revealed no pallor, icterus, clubbing, cyanosis, edema and lymphadenopathy.

Ashtavidh Pariksha: - *Nadi (Pulse)* was *Pitta Vata* and 72/min., *Mutra (Urine)* was 10-12 times/Day 1-2times/Night, *Mala (faces mix with Ama), Atidrav mala pravriti(frequent passes liquid stool)* 1 time/day,7-8times/night, *Jihva(tingue) was Sama(coated), Shabda*(voice)was *Spasta, Sparsha(touch) was Ruksh(dry), Drika(vision) was Samyak, and Akriti (body built)was Madhyam*(moderate).

Dasha Vidha Pariksha

Prakriti- Vata-Pitta, *Vikruti -Lakshan Nimittaj*, *Satva- Madhyam*, *Saar- Avar*, *Samhanana- Avar*, *Vaya-* 44yr, *Praman*- Height: 175cm, Weight: 65Kg, *Aharshakti -Pravar*, *Vyayamshakti- Avar*

***Nidana of Vataj Atisar* (Gastroenteropathy) *Upadrav of Madhumeha* (complication of Diabetes Melitius)**

Ahara: *Madhur, Katu, fast food, like* Tea, Penda, Gulab Jamun, Banana, Vada Panva, Bhel ,Pani Puri, Pasta, Pizza *sugarcane Juice, curd*

Viharaja: sedentary life style, less physical work, stress

Manas: *Krodha, Chinta*

Samprapti of Vataj Atisar (Gastroenteropathy) *Upadrav of Madhumeha* (complication of Diabetes Melitius- Type I) is mentioned in flow chart (Figure-1).

Samprapti Ghataka:

Dosha- *Vata Pradhan Tridosha*

Dushya- *Meda, Mansa, Kleda, Majja, Rasa*

Agni- *Vishamangni*

Srotas- *Annavaha, Purishvaha, Rasavaha, Mansavaha, Medovaha, Majjavaha*

Sroto dushti Prakar- *Atipravriti*

Udbhavasthana- *Amashaya*

Adhisthana- *Pakvashaya*

Sadhya- Asadhyata- *Yapya*

Diagnostic Assessment

(a) **Investigation***:* - Since the patient has been clinically diagnosed with *Vataja Atisar*, and objective investigation was not needed.

(b)**Final Diagnosis**: *Vataja Atisara Upadrava* of *Madhumeha* (Diabetic Gastroenteropathy due to Diabetes Mellitus Type-I).

THERAPEUTIC INTERVENTIONS:

The details of the internal medications prescribed have been mentioned in [Table 1].

Time line:

In the present case, 1st three formulations were administered for three months. After 15 days, mala pravriti (bowel movements) occurred 2-3 times/night. Consequently, the 4th and 5th medicines were introduced for diabetes and have been continued to this day.**[Table 1]**

Follow up and outcomes

During the first follow-up, the frequency of bowel movements was reduced to 2-3 times/night. In the second and third follow-up, there was marked relief in all his symptoms mentioned in [Table -2 and Table-3].

Table-1: Internal medications with dose, adjuvant and duration.

Date	Formulations	Dose	frequency and time with Adjuvant	Duration
07/12/2024	*Satavari churna* *Yastimadhu churna* *Amalaki churna* *Sutshekhar rasa*	2gm 500mg 2gm 125mg	Twice daily in empty stomach with normal water	1 month
07/12/2024	*Balchaturbhadra churna* *Musta churna* *Vidang churna* *Bilva churna*	2gm 1gm 1gm 1gm	Twice daily after food with Luke warm water	3 months
07/12/2024	*Hingvastak churna* *Shankha Bhasma* *Panchamrit parpati*	3gm 500mg 250mg	Twice daily after food with Luke warm water	3months
23/12/2024	*Mamejava Ghanvati*	2tablet	3times daily after food with normal water	To be continued
23/12/2024	*Chandraprabha vati*	2tablet	3times daily after food with normal water	To be continued

Table -2: Improvement in sign & symptoms

Sign & symptoms	**Before treatment 07/12/2024**	**1st Follow – up during treatment 23/12/2024**	**2nd Follow-up during treatment 09/01/2025**	**After treatment 07/03/2025**
Ati drava-mala Pravriti (Frequency of passes stool)	**2**	**1**	**0**	**0**
Udarshool (abdominal discomfort)	**2**	**1**	**0**	**0**
Adhman (Gaseous distention),	**2**	**1**	**0**	**0**
Pindikodwestan (Pain in calf muscles)	**2**	**1**	**0**	**0**
Swasa (difficulty in breathing – Grade 2)	**2**	**1**	**0**	**0**
Ubhayapadatala(Burning sensation in both soles)	**2**	**1**	**1**	**1**
Mutra daha (Burning Micturition)	**2**	**1**	**0**	**0**

Table- 3: Improvement in Investigation

Investigations	**Before treatment 07/12/2024**	**1st follow-up During treatment 30/12/2024**	**2nd Follow-up During treatment 27/01/2025**	**After treatment 07/03/2025**
FBS	282	300	271	198
PPBS	555	492	430	380
Insulin dose	8-8-8	8-8-10	5-5-10	5-5-10

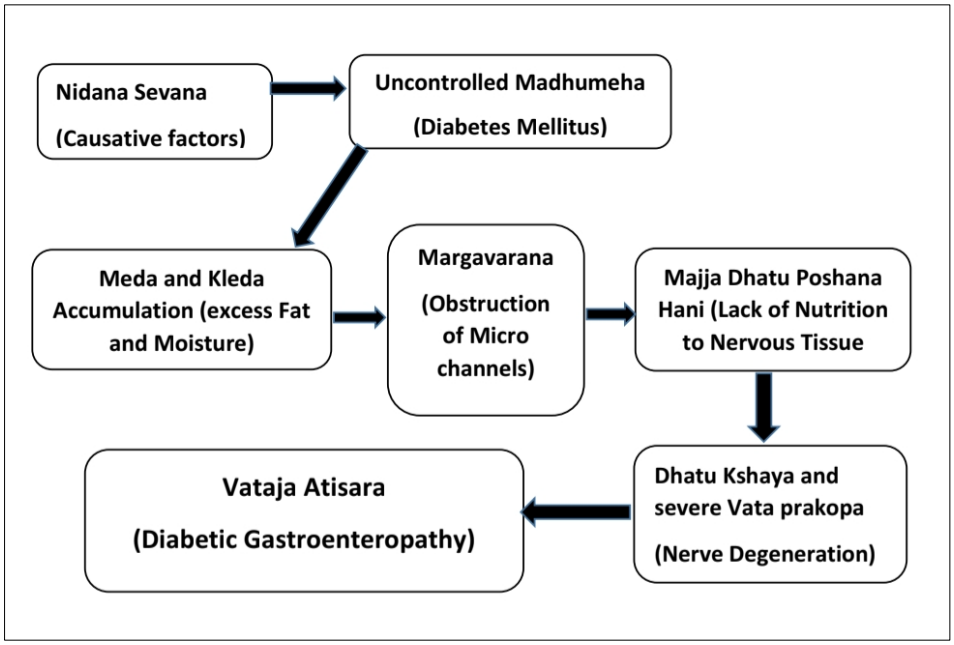


Figure-1: Flow chart of samprapti

DISCUSSION

Atisara is a major gastrointestinal disorder that directly correlates with watery diarrhea in modern science. In this case study diabetic gastroenteropathy was found due to chronic complication of Type-I DM. The prevalence of diabetic gastroenteropathy is underestimated because of diagnostic difficulties and limited awareness of pan-alimentary involvement. The underlying pathophysiological changes are complex, including autonomic neuropathy within the local enteric nervous system and regulatory spinal and vagal afferents involved in gut-brain communication.[7]Effective treatment is also necessary for improving blood glucose regulation, reducing malnutrition and avoiding unpredictable drug absorption.

Mode of Action of formulations: -

Hingvastak Churna having 8 ingredients as *Sunthi(Zingiber officinale), Maricha(Piper nigrum), Pippali(Piper longum), Ajmoda(Apium graveolens)* or *Yavani(Trachyspermum ammi, svetajirak(Cuminum cyminum)*, *krishna jirak(Nigella sativa), suddha Hingu(Ferula narthex)* and *Saindhava lavana* which are helpful to enhance digestion and pacify *Vata dosha* by its *Grahi Karm* (1st digest the food then expel out from body).[8] It's also improves the function of GI tract and reduces symptoms such as flatulence, Abdominal discomfort, bloating and decreases the frequencies of passes stool. ***Shank Bhasma*** having *pitta samak* properties also reduces pain in abdomen and gaseous distension. ***Panchamrita Parpati*** is a herbomineral formulations having 5 ingredients are *Gandhak, Parad, Loha Bhasma, Abhrak Bhasma* and *Tamra Bhasma*.[9] Its having *deepan, Pachan, Grahi, Laghu, Aruchi nasak,* Antiemetic and Antidiarrheal

Properties. ***Panchamrita parpati*** contains *Gandhak* and *Parad* are helpful to pacify *Pitta- Kapha* dosha, antimicrobial effect and improve the function of GI tract, *Abhrak Bhasma* and *Loha Bhasma* having *Rasayana* properties that help rejuvenate the tissues of the digestive tract in chronic condition of Diarrhea.[10] Additionally, it is believed to clear the *srotas* (channel), removing the *Ama*, enhancing nutrient absorption, strengthening the intestinal mucosa and regulate the intestinal movement. ***Balchaturbhadra churna*** is one of such important and widely practiced formulations which works on respiratory disorders, fever, diarrhea and vomiting.[11] It having 4 contains like *Ativisha, Karkatshringi, Pippali and Nagarmotha*. **The *rasa panchak*** of these ingredients are *Katu-Tikta Rasa* (pungent-bitter taste), *Katu vipaka*(Bio transferred Rasa), *ushna virya*(hot potency), *Guna*(properties)like *Laghu* (light for digestion), *ruksha* and properties like *deepan*(appetizer), *Pachana* (digestive) and *Grahi*(absorptive) are helpful *Shula* (abdominal pain), decrease the frequency of diarrhea and *swasa*.[12] ***Bilwa*** is considered the best among *Samgrahika, Deepaniya, Vata-kapha Prasamana*.[13] **The active ingredient of unripe fruit** pulp of *Bilwa* contains Marmelosine and Tannic acid which helps in amoebic dysentery and infective diarrhea.[14] ***Musta*** having *katu, tikta*, *Kashaya Ras, Laghu Guna, sheeta veerya* and *katu vipaka*.[15] So, its *Grahi, Deepana, Pachan*, *swedajanan* properties helpful in *Atisar.* ***Sutshekhar Rasa*** is a herbomineral formulation that acts as a *Pitta* pacifier and useful in *Urdhwaga Amlapitta*.[16] So, it stabilizes gastric secretions and balances digestive functions without suppressing natural digestive process and relives Burning sensation in abdomen and both soles. *Satavari* having *Madhura – Tikta rasa, sheet virya and Madhura vipaka* so it's pacify the *pitta dosha*, acts as a local demulcent, soothing the irritated inner lining of the stomach and esophagus. *Yastimadhu* is heavily documented its gastroprotective and mucoprotective actions and relieving *Hrit-Kanthadaha*(heart burn). *Amlaki* is a *Amlatva nasaka*(acidity destroyer) and *dahashamak*(burning sensation reliever). It serves as a *Rasayana(*natural antioxidant). ***Chandraprabha vati*** is a well-known drug has got very remarkable effect in mitigation of *Prameha* which correlates in many ways with obesity, metabolic syndrome and diabetes mellitus *(Madhumeha*).[17] The quantitative phytochemical studies showed a fair amount of phenolic and flavonoids in the *Chandraprabha vati.* Various phenolic compounds were reported to have anti-hyperglycemic activity. ***Mamejava ghanvati*** [18] contains *Mamejjak(Enicostemma littorale), Ativisha(Aconitum heterophyllum), Katuki(Picrorhiza kurroa) and pippali(Piper longum)*. Majority of ingredients are as *Tikta-Katu rasa, Ushana Virya, Laghu and ruksha guna, ushna virya* and *Kapha-Pitta* hara.[18] It acts on *raktavah srotasa* and helps in nourishment of *Mansa, Meda* and later *dhatu* elements which are loses and vitiated in *Madhumeha.*

CONCLUSION:

Diabetic gastroenteropathy is relatively under diagnosed complication of Diabetes Mellitus characterized by disturbances in gastrointestinal motility and Function. From an *Ayurvedic* perspective, its pathogenesis can be understood predominantly through *Agni dushti, Apana Vata* dysfunction and involvement of *Annavaha* and *Purishvaha srotas* with predominance of *Vata dosha* depending on *Vataj Atisar* the clinical presentation. *Ayurvedic* management may be a promising supportive approach in the management of diabetic gastroenteropathy, particularly for improving GI tract symptoms, bowel regularity and overall quality of life.

Limitation of the study:

However, appropriately designed clinical studies with larger sample sizes and standardized outcome measures are required to establish its efficacy and clarify the underlying mechanisms.

Declaration of patient consent:

Informed written consent of patient consent has been taken for the treatment and publication without disclosing the identity of patients.

Patient perspective:

Initially the patient was diagnosed with Gastroenteropathy due to Type I DM but He was not improving after administration of Allopathic medicine like loperamide. Then He came in Ayurveda hospital ITRA Jamnagar and admitted in IPD for the treatment of same. As per the patient Initially I thought I will not be able control passes stool, but now I am satisfied the result like decreases the frequency of passes stool and relived pain and bloating. I am satisfied with the outcome and wish to be continued the treatment for Type I DM.

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