RESEARCH PAPER

Integrative Ayurvedic management in uncontrolled type 2 diabetes mellitus with carbuncle: A case report

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ABSTRACT

Reduced insulin secretion, decreased glucose utilization, and increased glucose production are some of the reasons that might cause hyperglycemia, depending on the aetiology.
Symptoms include Polyuria, polydipsia, heaviness, burning sensation in the lower limbs. In uncontrolled severe diabetes cases there will be swelling, reddish blackish lesions with discharge known as carbuncles. It majorly affects people who are consuming more of white substaces with high glycemic content foods such as rice, sugar, maida. Majority of people who are leading sedentary lifestyle are primarily affected by diabetes mellitus. According to projections from the International Diabetes Federation (IDF), 382 million people (8.3% of the world's population) had diabetes in 2013; by 2035, that number is expected to rise to 592 million (10.1%).[1] According to Ayurveda increased blood sugar levels are termed as Prameha,which is clinically correlated to symptoms of Diabetes. The two main types of prameha are sahaja and apathyanimittaja are reflected in the Ayurvedic writings; among these, apathya nimittaja prameha closely resembles the modern ideas of Type-2 DM. Based on this, Ayurveda has defined sthula pramehi, which unmistakably aligns with contemporary notions of obesity and its part in the development of type-2 diabetes. Twenty to fifty percent of DM patients may be susceptible to soft tissue infections (STIs).[2]This case report analyses the impact of sthanika vranahara parisheka and shodhana procedures on diabetic carbuncle and uncontrolled diabetes mellitus type II in a 48 year old female patient.She went through Vranahara procedures like Panchavalkala dashamoola parisheka in initial days then after healing of wound she went through shodhana procedure like triphala niruha basti along with Sarvanga abhyanga followed by Sarvanga udhwartana followed by bashpa sweda and Takradhaara is given. Post treatment her wound was healed completely, her fbs, ppbs levels normalised.Symptoms like heaviness, burning sensation in lower limbs and disturbed sleep got improved. Diabetes mellitus is a condition characterized by persistent hyperglycemia brought on by insulin resistance, relative insulin insufficiency, or both.

Keywords: Diabetes carbuncle, uncontrolled diabetes, Asanadi niruha basti,Takradhara

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Case Report

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A 48-year-old, married, female patient reported to the Prameha speciality out patient department 3 . she had complaints of severe pain, swelling and blackish reddish lesion along with white discharge over the lower abdomen since one and half months. She had burning sensation of hands and feet. She also complained of heaviness all over the body along with disturbed sleep for 6 months. She is a chronic diabetic patient for past 12 years and since then was under anti-diabetic therapy.

The patient was moderately built, healthy looking individual. She had strong familial history of diabetes. Her father is diabetic since 18 years . Appetite and bowel movements were normal. She had no other known diseases, and was not under any medications.

Clinical examination findings

A diabetic profile conducted one week prior revealed FBS- 355 mg/dl, PPBS- 390 mg/dl, and HbA1c-9.8, confirming uncontrolled diabetes so she decided to take ayurvedic management. Ayurvedic Parameters like Dashavidha pariksha(ten fold examination) Ashtasthaana Pariksha(eight fold examination) of patient are depicted in (Table/Fig 1-2).

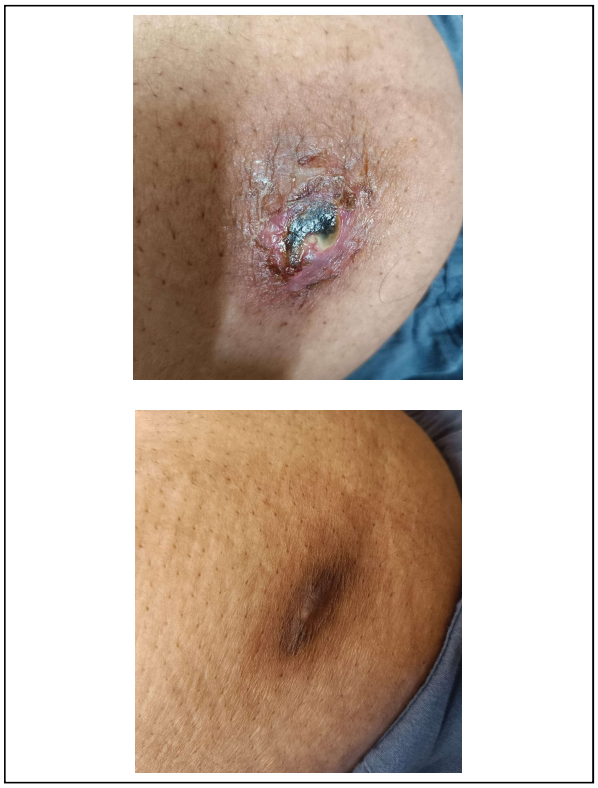
On examination her weight was 75kg, BP was 120/70 mmHg, Pulse was 80/min with respiratory rate was 19 breaths per minute. On inspection it was found that the blackish reddish lesion with discharge on right lumbar region of abdomen region confirming Diabetic Carbuncle (Table/fig -3a)

Dashavidha pariksha	Observation
Prakruti (Body constitution)	Vatakaphaja
Vikruti (Pathological variation)	Tridoshaja
Sara (Tissue quality)	Avara (Mild)
Samhanana (Body built)	Madhyama (Moderate)
Satva (Mental strength)	Madhyama (Moderate)
Satyma (Adaptability)	Madhyama (Moderate)
Ahara Shakti (Food intake and digestion capacity)	Madhyama (Moderate)
Vyama shakti (Exercise capacity)	Madhyama (Moderate)
Bala (Strength)	Madhyama (Moderate)
Vaya (Age)	Madhyama (Moderate)
Pramana (Weight)	Pravara (Superior)

(Table/fig-1) : *Dashavidha pariksha* (Ten fold Examination)

Asthastana pariksha	Observation
Nadi (pulse)	Vata kaphaja; 82 beats/minute
Mala (bowel)	Regular
Mutra (urine)	5-6 times/day
Jihwa (tongue)	Lipta (coated)
Shabda (speech)	Spasta (clear voice)
Sparsha (touch)	Anushnasheeta (normal)
Drik (vision)	Prakrut (normal)
Aakriti (body built)	Pravara (Superior)

(Table/Fig- 2) Ashtasthana Pariksha (Eight fold examination)



(Table/Figure -3) a) Before treatment b) After treatment

Diagnosis of Uncontrolled diabetes mellitus Type II is confirmed based on relevant clinical presentations and recent laboratory investigations of diabetic profile depicting elevated FBS,PPBS,HBA1c are 355 , 390 ,9.8 . Carbuncle is confirmed based on clinical presentation of Blackish reddish lesion which was observed during inspection. Both diabetes mellitus type 2 and carbuncle manifestation occurred due to Vata-kapha dushti; hence therapeutic intervention of Ayurvedic management of diabetic carbuncle in first visit followed by discharge medications (shamanoushadis) and later opted for 2nd time ayurvedic management for high blood sugar levels and later it is followed by discharge medications . Therapeutic intervention timeline depicted in (Table/Fig-4).

Visits	Investigations in each visit	Name of the procedure/ medicine	Medicine used with dosage and time of administration.

1 visit and admission	FBS 355 PPBS 390 HbA1c 9.8	Sthanika parisheka (lower abdomen region) Matra basti Niruha basti	panchavalkala + Dashamoola kashaya Dhanwantara taila 40ml Asanadi niruha basti Nisha amalaki Choorna CAP Grab 1-0-1 Gandhaka rasayana 3-0-0
2nd visit after 1 ½ month	FBS 240 PPBS 320	Shamanoushadis for 45 days	CAP Grab 1-0-1 Gandhaka rasayana 3-0-0 C P Vati 2-0-2 Shiva gutika 1-0-1
3rd visit after 1 ½ months with admission	FBS 190 PPBS 260 HbA1c 8.2	Sarvanga abhyanga flb Sarvanga udwartana flb Bashpa sweda Matra basti Niruha basti Takradhara	Abhyanga with Pinda taila Udhwartana with Udhwartana churna Bala guduchyadi taila 40ml Triphala niruha basti Jatamamsi, Amalaki, Musta
4th visit after 3 months	FBS 120 PPBS 164 HbA1c 7.0	Shamanoshadi Follow up for 3 months	C P Vati 2-0-2 Shivagutika 1-0-1 Smritisagara ras ½-0- 1/2

(Table/figure -4) shows investigations result along with detailed therapeutic intervention at various time points.

During and after Ayurvedic therapeutic procedures ,sedentary life style got reduced due to ungergoing Sarvanga abhyanga ,Sarvanga udwartana ,Takradhara and basti procedures and apathya ahara sevana got reduced by following proper pathya ahara sevana .During second visit after discharge time patient was instructed to do excercises along with brisk walk and in another hand patient was strictly informed to follow pathya ahara sevana which will reduce high glycemic levels . .After 90 days Post Triphala Niruha Basti ,the patients glycemic levels like fbs, Ppbs and HbA1c was monitored and revealed reduction in glycemic levels (Table/Fig-4).

Therapeutic diet timing	Therapeutic diet
Morning Drink(Anyone)	Methi water100ml , cinnamom water (lemon added) 100ml, Ginger lemon water 100ml
Breakfast options(Anyone)	Millet Dosa 1-2, Millet idli 2-3 in number + Herbal chutney 2tsf+ sambar 1wati Millet vegetable upma 1 bowl
Lunch options	2 Jowar roti + Bitter guard sabji or Methi sabji or vegetable sabji Millet rice 1 bowl+ moong dal katori
Evening snack options	Boiled green gram chat 1 cup or boiled channa chat 1 cup + Green Tea /Lemon tea without sugar 1 cup
Dinner options	1 salad (spiced with lemon, pepper, rock salt) 1 bowl Jowar Roti 1+ vegetable sabzi ½ katori+ millet rice ½ katori+ moong dal ½ katori

(Table/figure -5) Detailed therapeutic diet intervention at various timing.

The pathya ahara includes methi ,jowar ,low glycemic cereals Katu-tikta ,kashaya pradhana aharas .Combined effect of therapeutic diet along with the ayuvedic management results in reduced glycemic levels (Table/Fig-5).

DISCUSSION

Obesity is the main risk factor affecting insulin sensitivity, and rising obesity rates have coincided with rising prevalence of T2DM in young people.In just a few days, a carbuncle can grow from a hard, painful red mass to a diameter of 3 to 10 cm. Five to seven days later, suppuration takes place, accompanied by inflammatory infiltration into the subcutaneous and fascial tissues and pus discharge from many follicular orifices.[3].
As complications of diabetes, furuncles and carbuncles need to be handled carefully.[4]

The Asanadigana medications mentioned in Astanga Hridayam Sutrasthanam perform the functions of Pramehaghna and Kaphahara. Nirbahana Medodosha, etc. Asana, Tinisha, Bhurja, Khadira, and other Dravyas have anti-inflammatory, anti-diabetic, hypolipidemic, and antioxidative properties.Consequently, the diabetic

carbuncle's kledata is reduced, allowing the wound's shoshana to occur.[5]
Kalka Dravyas such as Punarnava, Gokshura, Guduchi, Amlaki, and Tvak exhibit hypoglycemic qualities. Gokshura and Punarnava also stimulate pancreatic beta cells, which generate insulin for glucose metabolism. Additionally beneficial in reducing diabetic neuropathy symptoms. Twak's high antioxidant content aids in tretreating diabetes-related problems.[6]

Vata Kapha shamana and Shothahara (Anti-inflammatory) action are seen in Dhanwantharam Thailam. Inhibition of inflammatory mediators is correlated with its vedanasthapana, Amapachana and vatanulomana actions. Its function in srotoshodhana, Balya and Manasika Prasadana (mood elevation and stress reduction) is explained by the improvement of Rasa rakta circulation and Manovaha srotas stimulation.[7]

Numerous experimental evidences have shown that Amla fruit possess antioxidant, hepato-protective, hypocholesterolemic and antiinflammatory activities, al gastroprotective. Terminalia bellerica is a laxative and antihelmenthic, whereas Terminalia chebula is an anticancer, strong antibacterial, anticaries, and antimutagenic agent that also prevents local anaphylaxis. Pharmacological actions such antibacterial, antioxidant, antisalmonella, hepatoprotective, antispasmodic, and bronchodilatory properties are thought to be caused by these substances.[8]

Shodhana, Lekhana, and Kapha-shamana are mentioned in Sthula-Balavan rogi, where Gandhaka Rasayana conducts Ama-Kapha pachana with Kledahara action and improves Dhatwagni and Dhatubala. Pitika, Vidradhi, and Madhumehaja vrana (diabetes ulcers) are effectively managed by its Raktaprasadana, Jantughna, and Vrana-ropana karma (caused by Shodhita Gandhaka and Triphala).[9]

The decrease in triglyceride levels suggests that CPV is improving insulin's action and restoring lipoprotein lipase's normal function. antidiabetic efficacy through a variety of mechanisms, including as insulin sensitization, pancreatic beta cell regeneration, antioxidant action, modulating insulin resistance, or changing the metabolism of carbohydrates.[10]

Takradhara calms the hypothalamus and pituitary gland, which are linked to several bodily and mental processes. As a result, blood and nutrient circulation proceeds normally. There is a decrease in peripheral resistance. The body's passageways open up. Overall metabolism improves as the cells begin eliminating the poisons.It increases blood flow to the brain, enhancing vision and removing toxins or Ama that are deeply entrenched.[11]

Methika includes alkaloids such triginelline, sapogenins like diosgenin, and amino acids like 4-hydroxyisoleucine that facilitate the simple release of insulin. Quercetin and Orientin are two examples of polyphenols that regulate blood glucose levels, particularly fasting blood glucose, and oxidative stress.[12]

CONCLUSION

The case study demonstrated a notable improvement in the patient's health, including reduced levels of fbs, ppbs, and HbA1c. This progress was achieved through a structured treatment regimen that integrated traditional detoxification therapies, known as shodhana karmas, with carefully supervised oral medications along with theurapeutic diet plan over a period of 6 months. The success of this integrateive strategy of Ayurvedic management with therapeutic diet includes reducing diabetic symptoms and lowering glycemic values highlights the potential for such approaches to be further investigated through clinical trials, offering valuable insights into alternative treatment options for individuals with similar conditions

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