Case Report

Earth-Element Deficiency and Glycaemic Improvement Following Integrative Acupuncture, Yoga, and Naturopathy: A Case Report

Parthasarathy S[1], Dhamodharan M[2], Vignayarema M[3], Pandiaraja M[4], Geethanjali S[5]

From, [1,2,3]MD Scholar, [4]AMO Lecturer Grade II / HOD i/c Department of Naturopathy, [5]AMO Lecturer Grade II / HOD i/c Department of Acupuncture and Energy Medicine, International Institute of Yoga and Naturopathy Medical Sciences, Chengalpattu, Tamil Nadu, India.

ABSTRACT

Type 2 diabetes mellitus is a metabolic disorder for which traditional systems offer complementary therapeutic approaches. This case report describes glycaemic changes in a 57-year-old man whose elevated blood glucose was detected during a routine health examination. Baseline fasting blood sugar (FBS), postprandial blood sugar (PPBS), and glycated haemoglobin (HbA1c) were 151 mg/dL, 222 mg/dL, and 8.1%, respectively. Traditional pulse and tongue assessment was interpreted within the Five-Element framework as an Earth-element deficiency involving the Spleen–Stomach functional system. The patient received an integrative intervention comprising acupuncture, gastrohepatic and mud packs, Bhramari Pranayama, and Prithvi Mudra for approximately five months. Following the intervention, FBS decreased to 78 mg/dL, PPBS to 109 mg/dL, and HbA1c to 6.3%. Body weight decreased from 65 to 62 kg. No antidiabetic medication or specific dietary or lifestyle modification was prescribed during this period. These improvements followed a multimodal intervention; however, the single-case design and lack of a control group prevent causal conclusions or attribution to any individual treatment component. Further controlled studies are needed to evaluate these observations.

Key words: Diabetes Mellitus, Type 2; Blood Glucose; Acupuncture Therapy; Yoga; Complementary Therapies.

Type 2 diabetes mellitus is a chronic metabolic disorder characterized by elevated blood glucose levels and an increased risk of long-term complications when glycaemia remains inadequately controlled. The condition may develop without prominent symptoms, and some individuals are diagnosed during routine health examinations. Accurate assessment of glycaemic status is therefore important for identifying the condition and monitoring changes over time. Fasting blood sugar (FBS) and postprandial blood sugar (PPBS) provide information about blood glucose levels at specific time points, whereas glycated haemoglobin (HbA1c) reflects average glycaemic exposure over approximately two to three months. These measurements provide complementary information for evaluating glucose regulation and the response observed during an intervention [1–3]. Traditional Chinese Medicine (TCM) includes the Five-Element, or Five-Phase, framework, which describes the relationships among Wood, Fire, Earth, Metal, and Water. Within this traditional system, the Earth element is associated with the Spleen–Stomach functional system and is traditionally linked to digestion, transformation, transportation, and nourishment [4–7].

Access this article online	
Received – 14th October 2026	
Initial Review – 15th October 2026	
Accepted – 27th October 2026	

Traditional diagnostic practice uses pulse and tongue examinations to characterize an individual's functional pattern. In the present case, we interpreted the pulse and tongue findings within this framework as indicating an Earth-element deficiency involving the Spleen–Stomach functional system. Such an interpretation represents a traditional assessment and should not be considered a substitute for biomedical diagnosis or biochemical monitoring. The World Health Organization (WHO) has highlighted the importance of developing an appropriate evidence base for the safe and effective use of traditional, complementary, and integrative medicine [5,6].

Several complementary approaches, including acupuncture and yoga-based practices, have been investigated for their potential role in supporting glycaemic management in people with type 2 diabetes. Systematic reviews have reported possible improvements in selected glycaemic outcomes following acupuncture, although variations in study quality, intervention protocols, and reported results limit the certainty of the available evidence [8,9,10]. Research has also examined gastrohepatic packs and abdominal mud-pack applications,

Corresponding author : Dr. Parthasarathy S. MD Scholar, International Institute of Yoga and Naturopathy Medical Sciences, Chengalpattu, Tamil Nadu, India.

Email Id: s.parthasarathy4313@gmail.com

but further investigation is required to establish their clinical relevance and effectiveness [11–13]. Yoga practices, including breathing techniques, have likewise been explored in relation to metabolic and general health outcomes [14,15].

The present case report describes changes in fasting blood sugar, postprandial blood sugar, and HbA1c in a 57-year-old man who received an approximately five-month integrative intervention comprising acupuncture, naturopathy-based applications, Bhramari Pranayama, and Prithvi Mudra. The intervention was guided by a traditional Earth-element assessment.

CASE PRESENTATION

A 57-year-old man attended a general health examination without any specific complaints related to diabetes mellitus. Elevated blood glucose levels were detected incidentally during the examination, leading to a diagnosis of type 2 diabetes mellitus. His baseline body weight was 65 kg, height was 158 cm, and body mass index (BMI) was 26.0 kg/m². His blood pressure was 128/88 mmHg. Laboratory investigations showed an FBS level of 151 mg/dL, a PPBS level of 222 mg/dL, and an HbA1c level of 8.1%. The patient had no relevant past medical history or associated illness, and no family history of diabetes mellitus was reported. He was not receiving antidiabetic medication before or during the intervention period. No specific dietary or lifestyle modification was prescribed during the treatment period.

As part of the integrative assessment, traditional pulse and tongue examinations were performed. The Earth pulse was assessed as deficient, while the overall pulse was described as moderate, with no excess pattern observed. The tongue appeared pale and moist, with a thin white coating. Within the Five-Element framework, these findings were interpreted as consistent with an Earth-element deficiency involving the Spleen–Stomach functional system. An integrative intervention comprising acupuncture, naturopathy-based applications, Bhramari Pranayama, and Prithvi Mudra was subsequently provided for approximately five months. Following completion of the intervention, the patient's clinical and biochemical parameters were reassessed. Written informed consent was obtained for publication of the case and relevant clinical information. The patient was informed about the purpose of reporting the case and the use of his clinical and laboratory findings for academic and scientific purposes. Consent was obtained in accordance with the ethical requirements applicable to case-report publication.

THERAPEUTIC INTERVENTION

An integrative therapeutic approach was provided for approximately five months. The treatment plan was formulated according to the patient’s clinical presentation and the traditional assessment indicating an Earth-element deficiency involving the Spleen–Stomach functional system. The intervention consisted of acupuncture, naturopathy-based applications, Bhramari Pranayama, and Prithvi Mudra. No antidiabetic medication was prescribed or used during the intervention period, and no specific dietary or lifestyle modification was introduced.Acupuncture was administered at CV12, ST36, LI11, and SP4, along with bilateral auricular stimulation at the Stomach point. Each session lasted 20 minutes.

Acupuncture was provided five days per week, followed by a two-day break, and this schedule was maintained throughout the treatment period.Naturopathy-based applications included gastrohepatic packs and abdominal mud packs, administered on alternate days throughout the intervention period. For the gastrohepatic pack application, a hot water bag was placed over the hepatic region of the anterior abdomen, while an ice bag was applied to the corresponding region of the back. The application was maintained for approximately 20 minutes per session. For the abdominal mud-pack application, clay mud was prepared to a thickness of approximately 2–3 inches, wrapped in white cotton cloth, and placed over the abdominal region for approximately 20 minutes per session. The gastrohepatic pack and abdominal mud pack were alternated on successive days.

The patient practiced Bhramari Pranayama daily for 5 minutes in the morning and another 5 minutes before sleep. Prithvi Mudra was practiced for 5 minutes each morning. Both practices were continued regularly throughout the treatment period. Thus, the intervention consisted of a multimodal integrative approach combining acupuncture, naturopathy-based applications, and yoga-based practices. Table 1 shows the summary of the interventions used. Gastrohepatic pack and mud pack were administered on alternate days, while Bhramari Pranayama and Prithvi Mudra were practiced daily. No specific dietary or lifestyle modification was prescribed during the intervention period.

FOLLOW-UP AND OUTCOMES

Following completion of the approximately five-month integrative intervention, the patient was reassessed using the same laboratory and clinical assessment methods used at baseline. The follow-up evaluation demonstrated improvement in all three recorded glycemic parameters. A reduction in body weight was also observed during the intervention period. Blood pressure also showed a decrease in the values (Table 2). The patient remained free from antidiabetic medication throughout the intervention period, and no specific dietary or lifestyle modification was prescribed. The observed changes therefore represent the clinical and biochemical findings recorded during the period in which the integrative intervention was provided. The patient tolerated the intervention without any documented adverse events.

Table 1. Summary of Therapeutic Intervention

Intervention	Details of Treatment	Frequency / Schedule	Duration
Acupuncture	CV12, ST36, LI11, SP4 and bilateral auricular Stomach point; 20 minutes per session	5 days/week, followed by a 2-day break	Approximately 5 months
Gastrohepatic Pack	Naturopathy-based gastrohepatic pack application	On alternate days	Approximately 5 months
Mud Pack	Naturopathy-based mud pack application	On alternate days, alternating with gastrohepatic pack	Approximately 5 months
Bhramari Pranayama	5 minutes in the morning and 5 minutes before sleep	Daily	Approximately 5 months
Prithvi Mudra	5 minutes in the morning	Daily	Approximately 5 months

Note: The 5-day treatment followed by a 2-day break applied only to acupuncture.

Table 2. Pre- and Post-Intervention Clinical and Biochemical Parameters

Parameter	Pre-intervention	Post-intervention
FBS, mg/dL	151	78
PPBS, mg/dL	222	109
HbA1c, %	8.1	6.3
Body weight, kg	65	62
BMI, kg/m²	26.0	24.8
Blood pressure, mmHg	128/88	118/78

PATIENT PERSPECTIVE

The patient reported willingness to undergo the integrative treatment approach and to continue with the prescribed practices throughout the intervention period. He was able to complete the treatment schedule and attended the follow-up assessment after completion of the intervention. The patient expressed satisfaction with the overall treatment experience and was willing to share his clinical information for academic and scientific reporting.

TIMELINE

The timeline from the diagnosis to the follow-up is given in Figure 1

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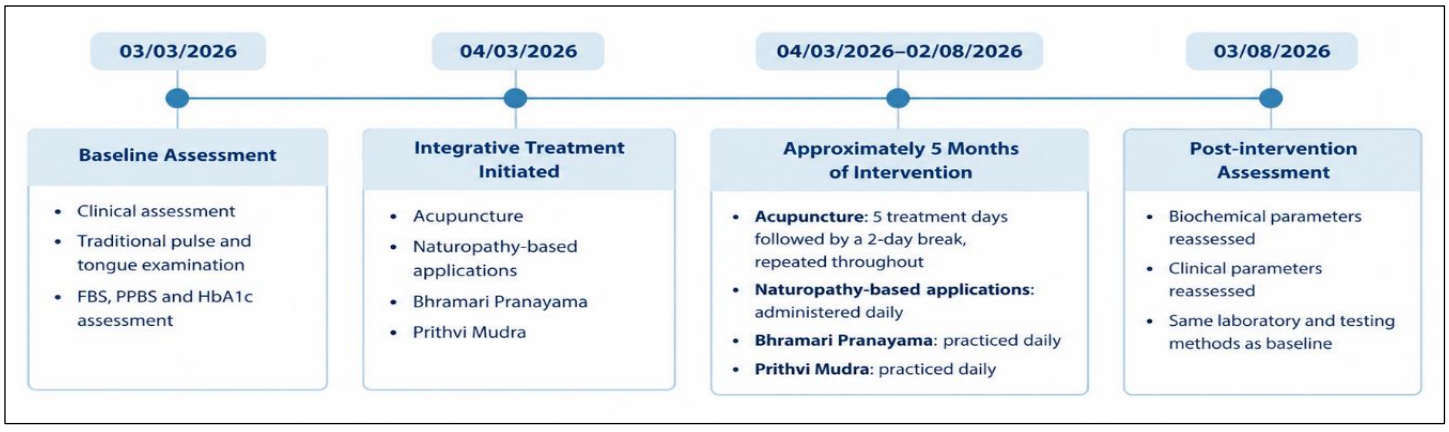


Figure 1. Timeline of the case and intervention.

DISCUSSION

The present case report describes improvement in glycaemic parameters, BMI, and blood pressure following approximately five months of an integrative intervention guided by the traditional Five-Element framework. Within the traditional assessment, the deficient Earth pulse and pale, moist tongue with a thin white coating were interpreted as indicating Earth-element deficiency for selecting the therapeutic approach.

However, traditional pulse and tongue findings should be understood within their own diagnostic framework and should not be regarded as an established biomedical explanation for diabetes mellitus [5,7].

Previous systematic reviews of acupuncture for the management of type 2 diabetes mellitus have reported potential improvements in selected glycaemic outcomes, including FBS and measures of insulin resistance. Nevertheless, the evidence has limitations, and findings concerning HbA1c and postprandial glucose are not consistently established across studies [8,9]. A previous case report has also described the use of acupuncture and energy medicine in diabetes management, although evidence from an individual case cannot establish treatment efficacy [4]. Regarding naturopathy-based applications, a randomized controlled study investigated yoga and gastrohepatic packs in people with type 2 diabetes mellitus, while a randomized crossover study examined the immediate effects of abdominal mud and wet packs on blood glucose and cardiovascular parameters [11,12]. Research on mud-pack treatment has also explored its effects on skin microcirculation; however, such findings do not directly establish a mechanism for glycaemic improvement [13].

Bhramari Pranayama has been evaluated in a systematic review of its health effects, while broader systematic-review evidence has examined yoga-based interventions in type 2 diabetes mellitus [14,15]. Controlled breathing and yoga-based practices may have relevance to stress regulation and autonomic function, but these mechanisms were not measured in the present patient. Similarly, the independent effect of Prithvi Mudra on blood glucose cannot be established from this case. Thus, the existing literature provides a rationale for further investigation of these approaches, rather than confirmation that any individual component was responsible for the observed improvement.

Several limitations must be considered when interpreting these findings. As this was a single case involving several therapeutic components without a control condition, the observed changes cannot establish a causal relationship between the intervention and the outcomes. Although no antidiabetic medication or specific dietary or lifestyle modification was prescribed during the intervention period, changes in the patient's lifestyle during the intervention period cannot be completely excluded. In addition, the simultaneous use of acupuncture, naturopathy-based applications, and yoga-based practices prevents assessment of the independent contribution of each component.

The absence of intermediate glycaemic measurements also limits understanding of the timing and pattern of improvement, while the traditional Earth-element assessment was not evaluated against an independent diagnostic standard. Further research should include adequately designed controlled studies with standardized intervention protocols, clearly documented treatment procedures, predefined clinical and biochemical outcomes, appropriate safety monitoring, and sufficient follow-up. Studies should also assess individual interventions separately, where feasible, and investigate whether traditional assessment findings are reproducible. These steps are necessary to determine whether the improvements observed in this case can be consistently reproduced and whether the integrative approach has a role as a complementary component of diabetes management.

CONCLUSION

This case report showed that the glycaemic parameters improved following approximately five months of an integrative intervention guided by a traditional Earth-element assessment in a patient with type 2 diabetes mellitus. However, controlled studies are needed to establish the effectiveness of this approach.

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How to cite this article: Parthasarathy S, Dhamodharan M, Vignayarema M, Pandiaraja M, Geethanjali S. Earth-Element Deficiency and Glycaemic Improvement Following Integrative Acupuncture, Yoga, and Naturopathy: A Case Report. Indian J Integr Med. 2026; Online First.

Funding: None; *Conflicts of Interest: None Stated*