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(CASE REPORT)

# TRADITIONAL NATUROPATHY AND DIETARY INTERVENTION IN A YOUNG WOMAN WITH PRESUMPTIVE IRON DEFICIENCY ANAEMIA: A CASE REPORT

Santhiya Saravanan, Santhosh Kumar Kandasamy *, Vino Pudhureddiyur Govindharaj and Dharmasamvarddhini

Sona Medical College of Naturopathy and Yoga, Salem, Tamil Nadu, India.
* Corresponding Author

ORCID Details
Santhosh Kumar Kandasamy: https://orcid.org/0009-0001-7101-0164

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## ABSTRACT

**Background:** Iron deficiency anaemia (IDA) is the commonest cause of anaemia worldwide and is conventionally treated with iron replacement.

**Case presentation:** A 21-year-old woman presented with fatigue, headache, dizziness, cold extremities, hair loss, and mild restless legs syndrome. Haemoglobin was 95 g/L, indicating moderate anaemia by World Health Organization (WHO) criteria. Iron deficiency was presumed on clinical grounds because red-cell indices and iron studies were unavailable.

**Intervention:** For two months she followed a naturopathic programme of daily iron-supportive drinks, a rotating seven-day vegetarian meal plan pairing iron-containing plant foods with ascorbic-acid-rich fruits, traditional soaking and fermentation, reduced tea intake, and a regular sleep schedule.

**Outcome:** Haemoglobin rose to 110 g/L (mild anaemia) but remained below the normal threshold of 120 g/L. She reported fewer symptoms, no febrile episodes, regular menstrual cycles, and no adverse effects.

**Conclusion:** Without iron-status biomarkers, menstrual and infective histories, or a comparison group, neither the diagnosis nor the cause of improvement can be confirmed. This single case is hypothesis-generating; controlled studies including ferritin and transferrin saturation are needed.

**Keywords:** Anaemia, Iron-deficiency; Naturopathy; Diet therapy; Life style; Case reports

## 1 INTRODUCTION

Anaemia is defined by the World Health Organization (WHO) as a haemoglobin concentration below 130 g/L in men and below 120 g/L in non-pregnant women [1]. It is broadly classified by red-cell size as microcytic, normocytic, or macrocytic. Iron deficiency anaemia (IDA), typically microcytic, is the most common cause worldwide and arises from blood loss, inadequate dietary iron intake, impaired absorption, or increased physiological demand such as pregnancy [2, 3]. In the absence of inflammation, a serum ferritin below about 30 µg/L is generally taken as indicating iron deficiency [2, 3].

Common symptoms of IDA include fatigue, lethargy, dizziness, dyspnoea, tinnitus, pallor, palpitations, restless legs syndrome, and headache, with additional signs such as hair loss, koilonychia, and atrophic glossitis [2, 3]. Diagnosis rests on clinical assessment together with a complete blood count and iron-status studies, including serum ferritin, serum iron, and transferrin saturation and, where a haemoglobinopathy is suspected, high-performance liquid chromatography [2, 3]. Standard management is oral or, where indicated, intravenous iron replacement, together with identification and correction of the underlying cause [2].

Non-haem iron absorption from plant foods is comparatively low and is influenced by dietary co-factors: ascorbic acid enhances absorption, whereas phytates and polyphenols inhibit it, an effect that can be reduced by soaking, sprouting, and fermentation [4, 5]. Systemic iron availability is in turn regulated by the hepcidin–ferroportin axis, which controls the release of iron from enterocytes, macrophages, and hepatocytes into the circulation [6]. Naturopathic and dietary approaches that combine iron-containing foods with absorption-enhancing and inhibitor-reducing strategies have therefore been proposed as adjuncts to conventional management, although the evidence for diet-only protocols in IDA remains limited.

Because patients commonly seek dietary and naturopathic care for anaemia, careful documentation of such cases, including their limitations, is of practical importance. The purpose of this report is to describe the clinical course of a young woman with anaemia, presumed to be iron-deficient, who followed a structured naturopathic dietary and lifestyle programme for two months, and to discuss what can and cannot be concluded from a single case of this kind.

## 2 CASE PRESENTATION AND METHODS

### 2.1 Patient information

A 21-year-old woman presented with headache, dizziness, cold hands and feet, hair loss, fatigue, and mild restless legs syndrome. In her own account she also experienced shivering and palpitations, daytime drowsiness on about five days of each week, recurrent fever about three times a month, and difficulty giving up habitual tea drinking. Haematological testing had confirmed anaemia, and she subsequently attended the outpatient department of Sona Medical College of Naturopathy and Yoga, Salem, Tamil Nadu, India, for further management. No menstrual, obstetric, medication, or family history is available for this report.

### 2.2 Clinical findings

Mild pallor was noted. Resting vital signs were normal; heart rate rose slightly only during strenuous activity. The reported symptom complex was consistent with iron deficiency, although it is not specific to it.

### 2.3 Diagnostic assessment

Baseline haemoglobin, measured on 14 February 2026, was 95 g/L (9.5 g/dL), consistent with moderate anaemia by WHO severity classification (80–109 g/L) for non-pregnant women [1]. Red-cell indices, peripheral smear, serum ferritin, serum iron, transferrin saturation, vitamin B12, and folate results are not available. The diagnosis of IDA is therefore presumptive, based on the clinical picture and the patient's age and sex, and other causes of anaemia were not formally excluded.

### 2.4 Ethical approval and consent

Ethical approval: this report describes routine clinical care in a single patient rather than a prospective research study, so Institutional Ethics Committee approval was not required. Consent: informed consent for the proposed naturopathic treatment plan and its expected benefits was obtained from the patient before treatment began. Written informed consent was obtained from the patient for participation and for publication of her anonymised clinical data and quoted perspective. The report follows the CARE guidelines for case reports [7].

### 2.5 Therapeutic intervention

The patient followed a naturopathic dietary and lifestyle programme for two months. It comprised a rotating seven-day meal-plan cycle, repeated throughout the period, and sleep-schedule regularisation. Each day began with an iron-supportive drink combining a botanical ingredient with ginger, lemon, or honey (Table 1), taken in the early morning before the first meal. Meals were vegetarian and built around iron-containing plant foods (e.g., moringa, beetroot, bajra, amaranth, turkey berry, legumes) paired with ascorbic-acid-rich fruits (amla, guava, citrus, berries) and prepared by traditional methods such as overnight soaking and fermentation. The complete seven-day cycle is given in Table 2. Exact portion sizes and the iron content of meals were not recorded.

**Table 1: Early-morning iron-supportive drinks used in the programme**

| S. No. | Preparation | Principal phytochemicals | Quantity / frequency |
|---|---|---|---|
| 1 | Coriander seed, ginger, and honey juice | Linalool, coriandrin, gingerols | 150 mL, once daily |
| 2 | Tulsi (holy basil) leaf, ginger, and honey juice | Eugenol, carvacrol, gingerols, ursolic acid | 150 mL, once daily |
| 3 | Hibiscus flower, lemon, and honey juice | Anthocyanins, hibiscus acid, citric acid, ascorbic acid | 150 mL, once daily |
| 4 | Amla (Indian gooseberry) and curry leaf juice with honey | Ascorbic acid, carbazole alkaloids, polyphenols | 150 mL, once daily |
| 5 | Blue pea flower and lemon juice with honey | Ternatins, citric acid, ascorbic acid | 150 mL, once daily |
| 6 | Overnight-soaked black raisin and fennel drink | Trans-anethole, fenchone, polyphenols | 150 mL, once daily |
| 7 | Mint, ginger, and honey juice | Menthol, menthone, gingerols | 150 mL, once daily |

**Table 2: Seven-day meal-plan cycle (repeated for two months)**

| Day | Early morning drink | Breakfast | Mid-morning snack | Lunch | Evening snack | Dinner |
|---|---|---|---|---|---|---|
| Sunday | Coriander seed, ginger, and honey drink | Moringa adai with coconut chutney | Oranges | Rice with ridge gourd stew | Puffed rice with roasted Bengal gram | Roti with palak paneer |
| Monday | Tulsi leaf, ginger, and honey drink | Beetroot poha with a squeeze of lime | Roasted makhana with honey-dipped amla | Brown rice mushroom biryani | Kiwi and oranges | Jowar dosa with tomato chutney |
| Tuesday | Hibiscus flower and lemon drink with honey | Oatmeal with pomegranate and banana | Sprouted moong dal with onion, green chilli, and tomato | Tomato rice with bitter gourd toast | Sesame and jaggery balls | Idli with snake gourd sauce |
| Wednesday | Amla and curry leaf drink with honey | Jowar dosa/idli with tomato sauce | Guava with boiled groundnuts | Rice with horse gram chutney | Soya chunks with onion and tomato | Poha with curry leaf and tomato |
| Thursday | Blue pea flower and lemon drink with honey | Bajra kali with amaranth greens dal sambar | Nut laddu and sprouted legume mix | Poha with spinach relish | Berries, prunes, and raisin mix | Roti with mushroom curry |

| | | | | | | |
|---|---|---|---|---|---|---|
| Friday | Overnight-soaked black raisin and fennel drink | Idli with mint chutney | Steamed sweet potato with onion and lemon | Bisibelabath with black Bengal gram | Legume cutlet with sauce | Carrot dosa with mint chutney |
| Saturday | Mint and ginger drink, or overnight-soaked fenugreek drink | Ragi puttu with black Bengal gram curry | Papaya salad | Rice with turkey berry curry | Fruit salad (pomegranate, grapes, oranges) | Idli with beetroot chutney |

During the programme the patient also reduced her habitual tea consumption to a minimal amount (see Patient perspective). This change was not recorded as a formal component of the protocol but is relevant, because tea polyphenols inhibit non-haem iron absorption [8].

The protocol was designed around general principles of non-haem iron nutrition: ascorbic acid and citric acid can reduce dietary ferric iron to the more absorbable ferrous form and keep it soluble; ascorbic acid counteracts the inhibitory effect of phytate [4]; and soaking and fermentation reduce phytate content [5]. These mechanisms are drawn from the nutrition literature and were not measured in this patient. Several of the drinks in Table 1 (for example hibiscus, tulsi, mint, and blue pea flower) are also polyphenol-rich and could in theory inhibit iron absorption; they were taken apart from main meals, but any net effect was not assessed.

### 2.6 Timeline

The clinical timeline is summarised in Table 3.

**Table 3: Clinical timeline**

| Date | Event |
|---|---|
| 14 Feb 2026 | Baseline haematological testing: haemoglobin 95 g/L (moderate anaemia). No iron studies available. |
| 14 Feb – 14 Mar 2026 | No interim haemoglobin measurement or treatment is recorded. |
| 15 Mar 2026 (week 0) | Outpatient evaluation and informed consent; naturopathic dietary and lifestyle programme started. |
| Weeks 1–8 | Seven-day meal-plan cycle followed (Table 2) with a regular sleep schedule and reduced tea intake; regular follow-up visits; no adverse effects reported. |
| 15 May 2026 (week 8) | End of programme; repeat haematological testing: haemoglobin 110 g/L (mild anaemia). No iron studies available. |

## 3 RESULTS

### 3.1 Follow-up and outcomes

The patient attended regular follow-up visits throughout the two-month programme, adhered to the dietary and lifestyle modifications including a regular sleep schedule, and reported no adverse effects or new health concerns. Repeat haematological testing at the end of the programme showed a rise in haemoglobin that moved her from the moderate to the mild category of anaemia by WHO classification, although the value remained below the WHO threshold for normal haemoglobin in non-pregnant women [1] (Table 4). Symptoms were not re-assessed with a structured scale. However, the patient reported a gradual reduction in her symptoms, less drowsiness, no fever during the programme, and regular menstrual cycles. Adherence was self-reported.

**Table 4: Baseline and follow-up parameters**

| Parameter | Baseline | After 2 months |
|---|---|---|
| Haemoglobin | 95 g/L (9.5 g/dL) | 110 g/L (11.0 g/dL) |
| WHO anaemia severity (non-pregnant women)* | Moderate (80–109 g/L) | Mild (110–119 g/L) |
| Daytime drowsiness (patient-reported) | About 5 days per week | Infrequent |
| Febrile episodes (patient-reported) | About 3 per month | None |
| Menstrual cycles (patient-reported) | Not documented | Regular |
| Other symptoms (headache, dizziness, cold extremities, hair loss, restless legs, shivering, palpitations) | Present | Gradual reduction reported; not quantified |
| Adverse effects | — | None reported |

WHO severity categories for haemoglobin in non-pregnant women: normal ≥120 g/L; mild anaemia 110–119 g/L; moderate anaemia 80–109 g/L; severe anaemia <80 g/L [1]

### 3.2 Patient perspective

"For the first few weeks I found it very hard to give up tea, so I reduced it to a minimal quantity. My symptoms then reduced gradually; my shivering and palpitations lessened. Before the diet I used to feel very drowsy on about five days of every week, but after taking this diet I did not feel drowsy very often. My periods became regular. I used to have fever about three times a month, but after the diet I did not get fever at all."

## 4 DISCUSSION

In this young woman with moderate anaemia presumed to be iron-deficient, a two-month naturopathic dietary and lifestyle programme was followed by a rise in haemoglobin from 95 to 110 g/L, with no reported adverse effects and patient-reported symptomatic improvement. Haemoglobin nevertheless remained below the normal threshold, so the anaemia had improved but not resolved.

The dietary strategy is consistent with established principles of non-haem iron bioavailability: ascorbic acid is a well-documented enhancer of absorption, whereas phytates and polyphenols are dose-dependent inhibitors that can be partly mitigated by food processing [4, 5, 8]. Whether the hepcidin–ferroportin axis, which responds to iron status and inflammation [6], was favourably influenced cannot be determined because it was not measured. The improvement should nevertheless not be attributed to the diet with confidence, because several other explanations are plausible. First, the patient reported that her menstrual cycles became regular; if excessive or irregular menstrual loss contributed to her anaemia, its resolution alone could raise haemoglobin, yet no menstrual history is available. Second, she reduced her tea intake, which is itself expected to improve non-haem iron absorption [8], and this cannot be separated from the effect of the other dietary changes. Third, she reported recurrent fevers before the programme and none during it; recovery from recurrent infection or inflammation can raise haemoglobin independently of iron intake. Fourth, the baseline measurement was made one month before the programme began, and no haemoglobin value is recorded at its start, so some of the change may predate the intervention. Finally, haemoglobin varies between measurements and laboratories, and regression to the mean cannot be excluded.

The main limitations are the single, uncontrolled design (n = 1); the lack of red-cell indices and of baseline and follow-up ferritin, serum iron, and transferrin saturation, which means that iron deficiency was never confirmed and other causes (thalassaemia trait, vitamin B12 or folate deficiency, chronic inflammation, gastrointestinal blood loss) were not excluded; the absence of menstrual, medication, and family histories; the absence of a structured symptom assessment; self-reported adherence; and unrecorded portion sizes and dietary iron intake. The polyphenol content of several of the drinks, noted above, is a further unquantified variable.

Standard management of IDA is iron replacement together with investigation and treatment of the cause [2]. This case does not suggest that dietary modification can replace iron supplementation, particularly in moderate or severe anaemia. Because this patient's haemoglobin remained below normal, completion of iron studies and evaluation of menstrual loss would be appropriate, with iron supplementation if deficiency is confirmed. Controlled studies that include iron-status biomarkers, structured symptom outcomes, and a comparison group receiving routine dietary counselling or iron supplementation are needed to determine whether naturopathic dietary protocols of this kind have a reproducible effect on IDA.

## 5 CONCLUSION

Because iron deficiency was not confirmed and menstrual changes, reduced tea intake, and resolution of recurrent fevers may each have contributed, the improvement in this patient cannot be attributed to the naturopathic programme. The observation is hypothesis-generating only, and iron-deficient patients should continue to receive standard evaluation and iron replacement where indicated.

## STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

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### *Disclosure of conflict of interest*

All authors declare no conflict of interest.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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