

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

"Effect of Daily, Alternate-Day, and Every-Other-Day Oral Iron Supplementation on Gastrointestinal Adverse Effects and Treatment Efficacy in Women Aged 18-45 with Iron Deficiency

Protocol summary

Study aim

"Compare the therapeutic efficacy and gastrointestinal adverse events of oral iron supplementation administered daily, every other day, and every two days in the treatment of iron-deficiency anemia in women."

Design

Phase IV, randomized, three-arm parallel trial, double-blind, N=150; computer-generated allocation stratified by baseline Hb.

Settings and conduct

Outpatient clinics of Jahrom University of Medical Sciences; women aged 18-45; screening, baseline labs, randomisation, 8-week follow-up; participants and outcome assessors blinded.

Participants/Inclusion and exclusion criteria

Eligibility Conditions Women aged 18 to 45 years attending the clinics of Jahrom University of Medical Sciences Diagnosis of iron deficiency anemia based on: Hemoglobin 8-12 g/dL Serum ferritin < 30 ng/mL No use of oral or injectable iron in the past 12 weeks No history of surgery, chemotherapy, or blood donation in the past 12 weeks GFR > 30 mL/min No chronic inflammatory, renal, hepatic, or malignant disease No gastrointestinal disorders affecting iron absorption No history of severe allergy or intolerance to iron supplements Ability to understand study information and provide informed consent Discontinuation Criteria Voluntary withdrawal by the participant at any time Pregnancy occurring during the study period Development of serious adverse events related to iron supplementation Non-adherence, defined as taking < 80% of the prescribed supplement Initiation or continuous use of interfering medications A final diagnosis other than iron deficiency anemia Hospitalization or any clinical deterioration that prevents continuation of participation

Intervention groups

Arm A: Daily oral iron; Arm B: Alternate-day oral iron;

Arm C: Every-two-day oral iron;

Main outcome variables

Mean hemoglobin change from baseline to week 8;
Frequency and severity of gastrointestinal adverse effects

General information

Reason for update

Acronym

ida-iron

IRCT registration information

IRCT registration number: **IRCT20251122068082N1**

Registration date: **2025-12-01, 1404/09/10**

Registration timing: **prospective**

Last update: **2025-12-01, 1404/09/10**

Update count: **0**

Registration date

2025-12-01, 1404/09/10

Registrant information

Name

ali naderi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 71 5684 5311

Email address

naderi.ali8001@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-01-21, 1404/11/01

Expected recruitment end date

2026-02-19, 1404/11/30 Actual recruitment start date empty Actual recruitment end date empty Trial completion date empty Scientific title "Effect of Daily, Alternate-Day, and Every-Other-Day Oral Iron Supplementation on Gastrointestinal Adverse Effects and Treatment Efficacy in Women Aged 18-45 with Iron Deficiency Public title Effect of Different Oral Iron Dosing Regimens on Side Effects and Treatment Effectiveness in Iron Deficiency Anemia Purpose Treatment Inclusion/Exclusion criteria Inclusion criteria: Women aged 18 to 45 years attending the clinics of Jahrom University of Medical Sciences Diagnosis of iron deficiency anemia based on: Hemoglobin 8-12 g/dL Serum ferritin < 30 ng/mL No use of oral or injectable iron in the past 12 weeks (based on self-report and medical records) No history of surgery, chemotherapy, or blood donation in the past 12 weeks GFR > 30 mL/min No chronic inflammatory, renal, hepatic, or malignant disease No gastrointestinal disorders affecting iron absorption (e.g., celiac disease, Crohn's disease, intestinal resection) No history of severe allergy or intolerance to iron supplements Ability to understand study information and provide informed consent Exclusion criteria: Voluntary withdrawal by the participant at any time Pregnancy occurring during the study period Development of serious adverse events related to iron supplementation (e.g., severe allergic reaction or disabling gastrointestinal side effects) Non-adherence, defined as taking < 80% of the prescribed supplement Initiation or continuous use of interfering medications (e.g., antacids, proton pump inhibitors, or specific antibiotics) A final diagnosis other than iron deficiency anemia (e.g., anemia of chronic disease, thalassemia) Hospitalization or any clinical deterioration that prevents continuation of participation Age From 18 years old to 45 years old Gender Female Phase 4 Groups that have been masked - Participant - Outcome assessor Sample size Target sample size: 80 Randomization (investigator's opinion)	Randomized Randomization description Participants will be allocated to the study groups using variable block randomization based on a computer-generated random sequence. The unit of randomization is the individual eligible participant. To ensure balanced distribution of anemia severity between the groups, stratified randomization will be performed according to baseline hemoglobin levels in two strata (8 to <10 g/dL and 10 to 12 g/dL), with independent block randomization within each stratum. The random allocation sequence will be generated by an individual independent of the study team using statistical software, and variable block sizes will be applied without disclosure to investigators involved in participant enrollment. Allocation concealment will be ensured using sequentially numbered, opaque, sealed envelopes that will be opened only after eligibility has been confirmed for each participant. No quasi-random allocation methods will be used in this study. Blinding (investigator's opinion) Double blinded Blinding description Double-blind Both participants and outcome assessors (clinical staff and data analysts) will remain unaware of group assignments. Blinding will be maintained using matched placebo tablets to ensure identical appearance and dosing schedule across all study arms. Placebo Used Assignment Parallel Other design features Secondary Ids empty Ethics committees 1 Ethics committee Name of ethics committee Ethics committee of jahrom University of Medical Sciences Street address motahari blvd City jahrom Province Fars Postal code 7174935488 Approval date 2025-11-12, 1404/08/21 Ethics committee reference number IR.JUMS.REC.1404.106 Health conditions studied
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1

Description of health condition studied

iron deficiency anemia

ICD-10 code

D50.9

ICD-10 code description

Iron deficiency anemia, unspecified

Primary outcomes

1

Description

Change in Blood Hemoglobin Concentration

Timepoint

Measurement of blood hemoglobin concentration at baseline (before initiation of the intervention) and eight weeks after initiation of the intervention

Method of measurement

Measurement of blood hemoglobin concentration using peripheral blood sampling and analysis with an automated blood cell counter in a university-affiliated clinical laboratory

2

Description

Severity of Gastrointestinal Adverse Effects Related to Iron Supplementation

Timepoint

Assessment of the severity of gastrointestinal adverse effects at baseline (before initiation of the intervention) and then weekly until the end of the eighth week of the intervention

Method of measurement

Assessment of the severity of gastrointestinal adverse effects including nausea, vomiting, abdominal pain, constipation, and diarrhea using a ten-point visual analogue scale completed by the participants

Secondary outcomes

1

Description

Adherence to Oral Iron Supplementation

Timepoint

Assessment of adherence to oral iron supplementation weekly during the intervention period and at the end of the eighth week

Method of measurement

Assessment of adherence to treatment based on pill count and participant self-report recorded in weekly follow-up forms

2

Description

Change in Serum Ferritin Concentration

Timepoint

Measurement of serum ferritin concentration at baseline (before initiation of the intervention) and eight weeks

after initiation of the intervention

Method of measurement

Measurement of serum ferritin concentration using blood samples and the immunoassay method in a university-affiliated clinical laboratory

3

Description

Serum Hepcidin Level

Timepoint

Measurement of serum hepcidin level at baseline (before initiation of the intervention) and eight weeks after initiation of the intervention

Method of measurement

Measurement of serum hepcidin level using blood samples and the enzyme-linked immunosorbent assay (ELISA) method in a university-affiliated clinical laboratory

Intervention groups

1

Description

Intervention group: Participants in this group will receive oral iron supplementation in the form of ferrous sulfate tablets. Each tablet contains three hundred and twenty-five milligrams of ferrous sulfate equivalent to sixty-five milligrams of elemental iron. The tablets will be administered on an alternate-day regimen, with one tablet taken every other day, for a total duration of eight weeks. Tablets are to be taken preferably on an empty stomach with a glass of water.

Category

Treatment - Drugs

2

Description

Intervention group: Participants in this group will receive oral iron supplementation in the form of ferrous sulfate tablets. Each tablet contains three hundred and twenty-five milligrams of ferrous sulfate equivalent to sixty-five milligrams of elemental iron. The tablets will be administered every forty-eight hours, with one tablet taken once every forty-eight hours, for a total duration of eight weeks. Tablets are to be taken preferably on an empty stomach with a glass of water.

Category

Treatment - Drugs

3

Description

Control group: Participants in this group will receive oral iron supplementation in the form of ferrous sulfate tablets. Each tablet contains three hundred and twenty-five milligrams of ferrous sulfate equivalent to sixty-five milligrams of elemental iron. The tablets will be administered once daily, one tablet per day, for a total duration of eight weeks. Participants will be instructed to take the tablets preferably on an empty stomach with a

glass of water.
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Imam Reza Clinic
Full name of responsible person
Hossein Ali Rostami Pour
Street address
Next to Peymanieh Hospital, Main Street, Imam Reza Clinic
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Jahrom University of Medical Sciences
Full name of responsible person
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Province
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715657898
Phone
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Email
info@jahrom.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Jahrom University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding

empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Jahrom University of Medical Sciences
Full name of responsible person
Hossein Ali Rostamipour
Position
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Person responsible for scientific inquiries

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Person responsible for updating data

Contact

Name of organization / entity

Jahrom University of Medical Sciences

Full name of responsible person

Ali Naderi

Position

Medical student

Latest degree

A Level or less

Other areas of specialty/work

General Practitioner

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Phone

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Email

naderi.ali8001@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available

Title and more details about the data/document

The collected data in this study include de-identified participant information, laboratory test results, treatment adherence, and primary and secondary clinical outcomes. All data will be anonymized before sharing. The dataset includes all primary and secondary outcome measures, as well as details of interventions and study groups.

When the data will become available and for how long

Access to the data will be available starting six months after the publication of study results and will continue for five years thereafter.

To whom data/document is available

Active researchers at academic and scientific institutions can request access to the data. Independent researchers with a relevant research proposal and ethical approval may also be granted access.

Under which criteria data/document could be used

Data are permitted solely for scientific research purposes, and commercial use is prohibited. Statistical analyses must follow the submitted research protocol, and any publication must cite the source and ethical approval.

From where data/document is obtainable

Applicants can contact Dr. Hossein Ali Rostamipour at Imam Reza Clinic, adjacent to Peymanieh Hospital, Jahrom. Contact details: Phone: +989177911197, Email: hossainroscawi41@yahoo.com

What processes are involved for a request to access data/document

The applicant must complete and submit a formal request form, provide their research proposal, and ethical approval. After review by the study coordinator, approved data will be provided in a de-identified file. The process typically takes 2 to 4 weeks.

Comments

All data and documents will be stored and shared in accordance with privacy regulations and research ethical standards.