Clinical Trial Protocol
Iranian Registry of Clinical Trials

13 Jun 2026

The effects of resveratrol supplement on some mediator genes of immunity and inflammation, inflammatory factors, oxidative stress and clinical outcomes in hospitalized acute ischemic stroke patients with enteral feeding in intensive care unit: A randomized triple-blind placebo-controlled trial

Protocol summary

Study aim

Determining the effect of resveratrol supplementation on the expression of some genes mediating immunity and inflammation, inflammatory factors, oxidative stress, and clinical outcomes in patients with acute ischemic stroke receiving enteral nutrition hospitalized in the intensive care unit

Design

A controlled, parallel-group, triple-blind, randomized, phase 3 clinical trial on 60 patients with acute ischemic stroke, randomized blocks

Settings and conduct

The study will take place at the Firouzgar Hospital. Patients will be randomly assigned to two groups: Resveratrol (containing 250 mg of resveratrol and 10 mg of grape skin extract) TDS (30 people); and placebo (containing maltodextrin, similar to resveratrol capsules)TDS (30 people) for 28 days. Stroke severity will be measured using the NIHSS Stroke Scale. At the beginning and end of the study, 10 cc of IV blood samples will be collected from participants. Mononuclear cells will be extracted from these samples to perform quantitative real-time PCR, and RNA will be extracted and converted into cDNA using a kit. Serum levels of IL-1β and IL-6 will be evaluated using a kit and ELISA method. The serum total antioxidant capacity and serum malondialdehyde level will be evaluated using a kit and calorimetric method. The researcher, the neurologist, individuals involved in blood collection and sample evaluation, and the person performing statistical analysis will all be blinded.

Participants/Inclusion and exclusion criteria

Patients with acute ischemic stroke receiving enteral nutrition admitted to the intensive care unit

Intervention groups

Resveratrol capsules containing 250 mg of resveratrol and 10 mg of grape skin extract three times a day, equivalent to 750 mg of resveratrol and 30 mg of grape skin extract, placebo capsule (containing maltodextrin)

Main outcome variables

IL-1β gene expression; Stroke severity score NIHSS

General information

Reason for update

Due to the low number of eligible patients and lack of patient recruitment, the design will be multicentered. The study will be conducted in the Stroke ICU of Firoozgar Hospital, the Intensive Care Unit of Shohadaye Tajrish Hospital of Shahid Beheshti University of Medical Sciences, the Intensive Care Unit of Sina Hospital of Tehran University of Medical Sciences, and the Intensive Care Unit of Rasoul Akram Hospital. According to the studies, we reduce the duration of the intervention to 28 days. The sample size, with the calculation of 20% drop out of the study, will be 60 patients. The responsible person in Firouzgar Hospital changed. The percentage of financial support was incorrectly written as 26%, but it was corrected to 100%.

Acronym

IRCT registration information

IRCT registration number: **IRCT20091114002709N61**
Registration date: **2023-07-24, 1402/05/02**
Registration timing: **prospective**

Last update: **2024-12-27, 1403/10/07**
Update count: **1**

Registration date

2023-07-24, 1402/05/02

Registrant information

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Farzad Shidfar

Name of organization / entity

Iran University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2024-12-30, 1403/10/10

Expected recruitment end date

2025-12-31, 1404/10/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effects of resveratrol supplement on some mediator genes of immunity and inflammation, inflammatory factors, oxidative stress and clinical outcomes in hospitalized acute ischemic stroke patients with enteral feeding in intensive care unit: A randomized triple-blind placebo-controlled trial

Public title

Resveratrol in acute ischemic stroke

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Willingness to cooperate and complete the informed consent form by the patient or legal guardian, patients aged 18-85 years, body mass index ≤ 35 kg/m2, starting the intervention within 24 hours after being admitted to the ICU and not spending More than 24 hours from the time of disease diagnosis until the time of entering the study, the severity of stroke based on the NIHSS standard is higher than 4, the patient's GCS at the time of visit is higher than 3, feeding by enteral feeding method, receiving at least 80 percent of the prescribed formula during the first 48 hours, none Absolute contraindications for enteral feeding (permanent ileus, ischemia of the digestive tract, bilious or continuous vomiting and mechanical obstruction), the possibility of hospitalization in the intensive care unit (ICU) for 28 days, not suffering from hepatic encephalopathy and liver cirrhosis, not suffering from metastatic cancer, not having infection and sepsis, not having AIDS (HIV), not having hepatitis, not receiving supplements or formulas that strengthen the immune system, including arginine, glutamine, colostrum, vitamins C and E, selenium, zinc or Omega-3 fatty acids or resveratrol supplement during the last 30 days before the start of the intervention, not suffering from allergies or intolerance to the enteral formula used in the present study and resveratrol supplement, non-participation in other interventional studies. No company in the past 30 days in other clinical trial studies at the same time as the present study

Exclusion criteria:

Pregnancy, lactation, intracranial hemorrhage, history of previous stroke, consumption of any natural food containing resveratrol within 48 hours before the onset of stroke, patients who received rtPA, more than 24 hours from onset of symptoms, seizure at onset Stroke, intracranial hemorrhage, symptoms suggestive of subarachnoid hemorrhage, rapid recovery or partial symptoms, stroke severity based on NIHSS criteria less than 4, patient suffering from dementia before stroke

Age

From **18 years** old to **85 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

If they meet the criteria for entering the study, they will be placed in one of the two study groups based on age (18-65 and ≥65) and gender. Randomization will be done using the Block Randomization technique using the Sealed Envelope online site. The random code of this study will be generated electronically using the block of four technique online site.

Blinding (investigator's opinion)

Triple blinded

Blinding description

Resveratrol will be purchased from Raha company, its purity is 100% and its type is trans, and the placebo will be made by the Faculty of Pharmacy of Iran University of Medical Sciences. Drug treatment will be similar in both groups. Random codes will be placed in sealed envelopes. All researchers, participants, and laboratory technicians will be blinded to the patient allocation process and intervention content. All the data is coded by another person who does not intervene in the study at first, and the person who analyzes the obtained data does not know about the process of allocating patients until the end, and thus the study will be three-way blind. Supplements and placebo are placed in similar containers. They will be coded as groups A and B by a person other than the researcher outside the study so that the researcher is unaware of the contents of the capsules, and in this way, the researcher is not aware of

the drug and placebo. Blinding is done so that the lack of knowledge of the type of supplements each group receives is considered.

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research Ethics Committees of Iran University of Medical Sciences

Street address
Shahid Hemmat Highway

City
Tehran

Province
Tehran

Postal code
14496-14535

Approval date
2024-12-22, 1403/10/02

Ethics committee reference number
IR.IUMS.REC.1402.293

Health conditions studied

1

Description of health condition studied
Acute ischemic stroke

ICD-10 code
I63.9

ICD-10 code description
Cerebral infarction, unspecified

Primary outcomes

1

Description
IL-1β gene expression

Timepoint
At the beginning of the study and 28th day

Method of measurement
Real-time PCR

2

Description
Stroke severity score NIHSS: National Institutes of Health Stroke Scale

Timepoint
At the beginning of the study and 28th day

Method of measurement
Physical examination

Secondary outcomes

1

Description
NLRP3 gene expression

Timepoint
At the beginning of the study and 28th day

Method of measurement
Real-time PCR

2

Description
ASC gene expression

Timepoint
At the beginning of the study and 28th day

Method of measurement
Real-time PCR

3

Description
Caspase-1gene expression

Timepoint
At the beginning of the study and after twenty-eight days of intervention

Method of measurement
Real-time PCR

4

Description
Serum levels of IL-1β

Timepoint
At the beginning of the study and after twenty-eight days of intervention

Method of measurement
By ELISA kit

5

Description
Serum levels of IL-6

Timepoint
At the beginning of the study and after twenty-eight days of intervention

Method of measurement
By ELISA kit

6

Description
Serum total antioxidant capacity

Timepoint
At the beginning of the study and after twenty-eight days of intervention

Method of measurement
Colorimetric

7

Description
Serm malondialdehyde (MDA) level
Timepoint
At the beginning of the study and after twenty-eight days of intervention
Method of measurement
Colorimetric

8

Description
Barthel Index
Timepoint
28 days after the end of the intervention and 90 days after the end of the intervention
Method of measurement
Based on specific forms that the patient or his / her companions will be asked by phone or in person.

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Description
Modified Rankin Scale (MRS)
Timepoint
28 days after the end of the intervention and 90 days after the end of the intervention
Method of measurement
Based on specific forms that the patient or his / her companions will be asked by phone or in person.

10

Description
APACHE II score
Timepoint
At the beginning of the study and after twenty-eight days of intervention
Method of measurement
in this study, APACHEII questionnaire will be complimented.

11

Description
SOFA score
Timepoint
At the beginning of the study and after twenty-eight days of intervention
Method of measurement
in this study, SOFA questionnaire will be complimented.

12

Description
NUTRIC score
Timepoint
At the beginning of the study and after twenty-eight days of intervention
Method of measurement
in this study, NUTRIC score questionnaire will be complimented.

13

Description
Mini-Mental State Examination (MMSE)
Timepoint
90 days after the end of the intervention
Method of measurement
in this study, MMSE score questionnaire will be complimented.

14

Description
Anthropometric indices
Timepoint
At the beginning of the study and after twenty-eight days of intervention
Method of measurement
Physical examination

Intervention groups

1

Description
Intervention group: Resveratrol capsules containing 250 mg of resveratrol and 10 mg of grape skin extract three times a day, equivalent to 750 mg of resveratrol and 30 mg of grape skin extract
Category
Treatment - Other

2

Description
Control group: Daily intake of placebo for 28 days
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Firouzgar educational, research and treatment, center
Full name of responsible person
Tara Khoeini
Street address
Beh Afarin St., Karim Khan Zand Blvd., Tehran, Iran
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2

Recruitment center

Name of recruitment center
Shohadaye Tajrish Hospital

Full name of responsible person
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3

Recruitment center

Name of recruitment center
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Full name of responsible person
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4

Recruitment center

Name of recruitment center
Hazrat Rasul Akram educational, research and treatment complex

Full name of responsible person
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Iran University of Medical Sciences

Full name of responsible person
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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Iran 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
Iran University of Medical Sciences

Full name of responsible person
Farzad shidfar

Position
Professor

Latest degree
Ph.D.

Other areas of specialty/work
Nutrition

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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
Yes - There is a plan to make this available

Title and more details about the data/document
All data is potentially shareable after de-identifying individuals

When the data will become available and for how long
The access period starts 6 months after the results are published

To whom data/document is available
Only for researchers working in academic and scientific institutions

Under which criteria data/document could be used
In order to use the data to conduct another study or use in patients

From where data/document is obtainable
Dr Farzad Shidfar, shidfar.f@iums.ac.ir

What processes are involved for a request to access data/document
Request by e-mail along with providing a complete explanation of why the data is needed

Comments