

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

02 Jun 2026

### The effect of saffron on pulmonary function and serum levels of Interleukin-6 and Tumor Necrosis Factor- $\alpha$ in patients with Chronic Obstructive Pulmonary Disease

#### Protocol summary

##### Study aim

Evaluation of the saffron effects on serum levels of interleukin-6 and tumor necrosis factor-alpha in chronic obstructive pulmonary disease (COPD).

##### Design

A randomized, double-blind with parallel groups in placebo-controlled clinical trial.

##### Settings and conduct

COPD patients referred to pulmonary clinic of Imam Khomeini Hospital in Ardabil, who fulfilled inclusion criteria, were invited to participate in this study. Demographic data (age, height, weight, body mass index, exacerbation rate, smoking history), MMRC (modified Medical Research Council) dyspnea scale and COPD assessment test (CAT) are completed by patients. Then, spirometry, pulse-oximetry, and 6-minute walk distance tests are administered. Blood sample is drawn for serum IL-6 and TNF- $\alpha$  levels analysis. Coded packets containing saffron and placebo (A or B codes) are randomly assigned by a medical physician to the patients and the control groups. Then, 30 mg saffron tablets and the placebo are prescribed once daily for 12 weeks. After 4 weeks of intervention complete examination and drug side effects are conducted by physician. At the end of the 12th weeks, physical examination, spirometry, pulse-oximetry, CAT questionnaire, 6-minute walk distance test and blood sampling for serum IL-6 and TNF- $\alpha$  levels will be conducted.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: COPD patients; Age between 40-85 years; Clinically stable disease in previous 8 weeks; Acceptance of study design by patients. Exclusion Criteria: History of malignancy, Diabetes, Cardiac disease, Chronic inflammatory disease, Liver disease.

##### Intervention groups

Intervention group: Efficacy of saffron on pulmonary

function and inflammatory markers in Chronic Obstructive Pulmonary Disease. Control group: Receiving placebo in patients with Chronic Obstructive Pulmonary Disease.

##### Main outcome variables

The level of IL-6, TNF- $\alpha$ , Pulmonary Function Test

#### General information

##### Reason for update

Adding variables to the study

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20110109005579N2**

Registration date: **2019-09-17, 1398/06/26**

Registration timing: **prospective**

Last update: **2020-01-11, 1398/10/21**

Update count: **1**

##### Registration date

2019-09-17, 1398/06/26

##### Registrant information

##### Name

Hassan Ghobadi

##### Name of organization / entity

##### Country

Iran (Islamic Republic of)

##### Phone

+98 45 3325 1401

##### Email address

h.ghobadi@arums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2019-09-23, 1398/07/01

**Expected recruitment end date**

2020-02-19, 1398/11/30

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

The effect of saffron on pulmonary function and serum levels of Interleukin-6 and Tumor Necrosis Factor- $\alpha$  in patients with Chronic Obstructive Pulmonary Disease

**Public title**

Saffron effect in Chronic Obstructive Pulmonary Disease (COPD).

**Purpose**

Treatment

**Inclusion/Exclusion criteria****Inclusion criteria:**

Chronic Obstructive Pulmonary Disease Age between 40-85 Clinically stable disease in previous 8 weeks Acceptance of study design by patients

**Exclusion criteria:**

Active infectious disease Bronchiectasis Chronic inflammatory diseases Active liver and kidney diseases Cancer patients Cardiac disease (myocardial infarction and unstable angina in previous 6 months) Sensitivity to saffron

**Age**

From **40 years** old to **85 years** old

**Gender**

Male

**Phase**

3

**Groups that have been masked**

- Participant
- Care provider
- Outcome assessor
- Data analyser

**Sample size**

Target sample size: **90**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

The participants will be recruited from patients that referred to the pulmonary clinic of Ardabil Imam Khomeini Hospital. Patients will be evaluated and in the case of satisfying inclusion criteria, they will be referred to the clinics nurse. A per-defined list will be utilized for subject's enrollment. The list consists two groups of trial and placebo (each 45 subjects) which was prepared by Excel using Randbetween function. Patients will be allocated in two groups by simple randomization. 45 "A" labeled and 45 "B" labeled sealed envelopes will be used by nurse to provide medicine and placebo to patients.

**Blinding (investigator's opinion)**

Double blinded

**Blinding description**

Participants, patient care student and outcome

evaluator, person responsible for data collection don't aware from pocket contents.

**Placebo**

Used

**Assignment**

Parallel

**Other design features****Secondary Ids**

empty

**Ethics committees****1****Ethics committee****Name of ethics committee**

Ardabil University of Medical Sciences Ethic Committe

**Street address**

Internal Medicine Department, Emam Khomeini Hospital, Shahid Noe-Aghdam Street, Ardabil

**City**

Ardabil

**Province**

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**Postal code**

56196-47531

**Approval date**

2019-03-03, 1397/12/12

**Ethics committee reference number**

IR.ARUMS.REC.1397.279

**2****Ethics committee****Name of ethics committee**

Ardabil University of Medical Sciences Ethic Committe

**Street address**

Internal Medicine Department, Emam Khomeini Hospital, Shahid Noe-Aghdam Street, Ardabil

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**Approval date**

2019-11-03, 1398/08/12

**Ethics committee reference number**

IR.ARUMS.REC.1398.428

**Health conditions studied****1****Description of health condition studied**

Chronic obstructive pulmonary disease

**ICD-10 code**

J44.8

**ICD-10 code description**

Other specified Chronic Obstructive Pulmonary Disease

## Primary outcomes

### 1

#### **Description**

Serum Level of IL-6

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Laboratory

### 2

#### **Description**

Tumor Necrosis factor alpha (TNF- $\alpha$ )

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Laboratory

### 3

#### **Description**

Pulmonary Function Test

#### **Timepoint**

beginning of study and 12 weeks after intervention

#### **Method of measurement**

Laboratory (Spirometry Device)

### 4

#### **Description**

Total oxidant status (TOS)

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Laboratory

### 5

#### **Description**

Total antioxidant capacity (TAC)

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Laboratory

### 6

#### **Description**

Nuclear factor kappa B (NF- $\kappa$ B)

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Laboratory

## Secondary outcomes

### 1

#### **Description**

COPD Assessment Test (CAT)

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

CAT Questionnaire, accessible at:

<https://www.catestonline.org>

### 2

#### **Description**

Dyspnea scale: Modified Medical Research Council (MMRC) questionnaire

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Modified Medical Research Council (MMRC) questionnaire

### 3

#### **Description**

Exercise scale: Six Minute Walk Distance (6MWD)

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Six Minute Walk Distance (6MWD) questionnaire

### 4

#### **Description**

Oxygen saturation of arterial blood

#### **Timepoint**

Beginning of study and 12 weeks after intervention

#### **Method of measurement**

Pulse oximetry

### 5

#### **Description**

Saffron side effects

#### **Timepoint**

4 weeks and 12 weeks after intervention

#### **Method of measurement**

Record of adverse effect in checklist

## Intervention groups

### 1

#### **Description**

"Intervention group:" Patients with Chronic Obstructive Pulmonary Disease will be receive standard treatments based on Global Initiative for Chronic Obstructive Lung Disease (GOLD) Guideline and 30mg/day Saffron Tablets for 12 weeks (Produced by: BuAli Institute of Pharmaceutical Sciences, Pharmaceutical Product Development Center, Sina Pharmaceutical Company, Reg. No. 48674).

#### **Category**

Treatment - Drugs

### 2

#### **Description**

"Control group:" Patients with Chronic Obstructive Pulmonary Disease will be receive standard treatments

based on Global Initiative for Chronic Obstructive Lung Disease (GOLD) Guideline and 30mg/day Saffron Placebo Tablets for 12 weeks (Produced by: BuAli Institute of Pharmaceutical Sciences, Pharmaceutical Product Development Center, Sina Pharmaceutical Company, Reg. No. 48674).

**Category**

Treatment - Drugs

**Recruitment centers****1****Recruitment center****Name of recruitment center**

Emam Khomeini Hospital, Ardabil

**Full name of responsible person**

Hassan Ghobadi

**Street address**

Internal Medicine Department, Emam Khomeini Hospital, Shahid Noe-Aghdam Street, Ardabil

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h.ghobadi@arums.ac.ir

**Sponsors / Funding sources****1****Sponsor****Name of organization / entity**

Ardabil University of Medical Sciences

**Full name of responsible person**

Vice-president for research affair

**Street address**

Emam Khomeini Hospital, Shahid Noe-Aghdam Street, Ardabil, IRAN

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**Grant name****Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

No

**Title of funding source**

Ardabil 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**

Ardabil University of Medical Sciences

**Full name of responsible person**

Hassan Ghobadi

**Position**

Associate professor

**Latest degree**

Subspecialist

**Other areas of specialty/work**

Pulmonologist

**Street address**

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**Person responsible for scientific inquiries****Contact****Name of organization / entity**

Ardabil University of Medical Sciences

**Full name of responsible person**

Hassan Ghobadi

**Position**

Associate professor

**Latest degree**

Subspecialist

**Other areas of specialty/work**

Internal Medicine

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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**

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

**Informed Consent Form**

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

**Clinical Study Report**

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

**Analytic Code**

Undecided - It is not yet known if there will be 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**

Data of outcome can be shared.

**When the data will become available and for how long**

Result access after paper publication

**To whom data/document is available**

Academic researcher

**Under which criteria data/document could be used**

As a scientific paper

**From where data/document is obtainable**

Corresponding author, Hassan Ghobadi

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

via email address: h.ghobadi@arums.ac.ir

**Comments****Person responsible for updating data****Contact****Name of organization / entity**

Ardabil University of Medical Sciences

**Full name of responsible person**

Hassan Ghobadi

**Position**

Associate professor

**Latest degree**

Subspecialist

**Other areas of specialty/work**

Pulmonologist

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