

LETTER

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The efficacy and safety of Ivermectin in patients with mild and moderate COVID-19: A structured summary of a study protocol for a randomized controlled trial

Fatemeh Sadat Hosseini¹, Alireza Malektojari², Sara Ghazizadeh², Mehdi Hassaniazad², Parivash Davoodian², Habib Dadvand², Amin Reza Nikpoor³, Sara Nikoofal-Sahlabadi⁴, Sara Kahoori⁵, Mojtaba Sepandi⁶, Soheil Hassanipour⁷ and Mohammad Fathalipour^{5*} 

Abstract

Objectives: We will evaluate the efficacy and safety of Ivermectin in patients with mild and moderately severe COVID-19.

Trial design: This is a phase 3, single-center, randomized, open-label, controlled trial with a 2-arm parallel-group design (1:1 ratio).

Participants: The Severe Acute Respiratory Syndrome Departments of the Shahid Mohammadi Hospital, Bandar Abbas, Iran, will screen for patients age ≥ 20 years and weight ≥ 35 kg for the following criteria:
Inclusion criteria for patients with mild COVID-19 symptoms (outpatients)

1. Diagnosed mild pneumonia using computed tomography (CT) and/or chest X-ray (CX-R) imaging, not requiring hospitalization.
2. Signing informed consent.

Inclusion criteria for patients with moderate COVID-19 symptoms (inpatients)

1. Confirmed infection using PCR.
2. Diagnosed moderate pneumonia using CT and/or CXR imaging, requiring hospitalization.
3. Hospitalized ≤ 48 hours.
4. Signing informed consent.

Exclusion criteria

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* Correspondence: m.fathalipour@hums.ac.ir

⁵Department of Pharmacology and Toxicology, Faculty of Pharmacy, Hormozgan University of Medical Sciences, Bandar Abbas, Iran
Full list of author information is available at the end of the article



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1. Severe and critical pneumonia due to COVID-19.
2. Underlying diseases, including AIDS, asthma, loiasis, and severe liver and kidney disease.
3. Use of anticoagulants (e.g., warfarin) and ACE inhibitors (e.g., captopril).
4. History of drug allergy to Ivermectin.
5. Pregnancy or breastfeeding.

Intervention and comparator: Intervention groups: Outpatient and inpatient groups will receive the standard treatment regimen for mild and moderate COVID-19, based on the Iranian Ministry of Health and Medical Education's protocol, along with oral Ivermectin (MSD Company, France) at a single dose of 0.2 mg/kg. Control groups: The outpatient group will receive hydroxychloroquine sulfate (Amin Pharmaceutical Company, Iran) at a dose of 400 mg twice a day for the first day and 200 mg twice a day for seven subsequent days. The inpatient group will receive 200/50 mg Lopinavir/Ritonavir (Heterd Company, India) twice a day for the seven days, plus five doses of 44 mcg Interferon beta-1a (CinnaGen, Iran) every other day.

Other supportive and routine care will be the same in both outpatient and inpatient groups.

Main outcome: The primary outcomes are composite and include the improvement of clinical symptoms and need for hospitalization for outpatient groups, and the length of hospital stay until discharge, the need for ICU admission until discharge, and the need for mechanical ventilation for inpatient groups within seven days of randomization.

The secondary outcome is the incidence of serious adverse drug reactions within seven days of randomization.

Randomization: Patients in both outpatient (mild) and inpatient (moderate) groups will be randomized into the treatment and control groups based on the following method. A simple randomization method and table of random numbers will be used. If the selected number is even, the patient is allocated to the treatment group, and if it is odd, the patient is allocated to the control group in a 1:1 ratio.

Blinding (masking): This is an open-label study, and there is not blinding.

Numbers to be randomized (sample size)

A total number of 120 patients (60 outpatients and 60 patients) will be randomized into two groups (30 patients in each of the intervention groups and 30 patients in each of the control groups).

Trial Status: The protocol is Version 1.0, November 17, 2020. Recruitment began November 25, 2020, and is anticipated to be completed by February 25, 2021.

Trial registration: This clinical trial has been registered in the Iranian Registry of Clinical Trials (IRCT). The registration number is "IRCT20200506047323N6". The registration date is November 17, 2020.

Full protocol: The full protocol is attached as an additional file, accessible from the Trials website (Additional file 1). In the interest in expediting the dissemination of this material, the familiar formatting has been eliminated; this letter serves as a summary of the key elements of the full protocol.

Keywords: COVID-19, Randomized controlled trial, Protocol, Ivermectin, Hospitalization Mechanical ventilation, Clinical symptoms

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s13063-020-04988-7>.

Additional file 1. Full Study Protocol.

Authors' contributions

Study design and protocol development: FSH, MH, and MF. Subject recruitment and follow-up: FSH, AM, SG, MH, PD, and HD. Data analysis: SK, SH. Manuscript preparation: ARN, SN, SK, and MF. Manuscript review and submission: ARN and MF. All authors read and approved the final manuscript.

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Availability of data and materials

The corresponding author has access to the final trial information, and the data will be available on reasonable request (Contact: M.fathalipour@hums.ac.ir).

Ethics approval and consent to participate

The current trial was approved by the Ethics Committee of Hormozgan University of Medical Sciences (Ethics committee reference number: IR.HUMS.REC.1399.410) on November 15, 2020. The investigators declare the trial has received ethical approval from the aforementioned ethical committee as described above. A signed informed consent will be freely completed by all participants before randomization.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Author details

¹Student Research Committee, Hormozgan University of Medical Sciences, Bandar Abbas, Iran. ²Infectious and Tropical Diseases Research Center, Hormozgan Health Institute, Hormozgan University of Medical Sciences, Bandar Abbas, Iran. ³Molecular Medicine Research Center, Hormozgan Health Institute, Hormozgan University of Medical Sciences, Bandar Abbas, Iran. ⁴Department of Pharmaceutics, Faculty of Pharmacy, Hormozgan University of Medical Sciences, Bandar Abbas, Iran. ⁵Department of Pharmacology and Toxicology, Faculty of Pharmacy, Hormozgan University of Medical Sciences, Bandar Abbas, Iran. ⁶Department of Epidemiology and Biostatistics, Faculty of Health, Baqiyatallah University of Medical Sciences, Tehran, Iran. ⁷Gastrointestinal and Liver Diseases Research Center, Guilan University of Medical Sciences, Rasht, Iran.

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