

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jun 2026

The effect of methylene blue on acute respiratory distress syndrome in Covid-19 disease

Protocol summary

Study aim

Evaluation of methylene blue administration on mortality of patients with acute respiratory distress syndrome caused by Covid disease 19

Design

A randomized, phase 3, clinical trial with parallel groups and without blinding is performed on 130 patients. Simple randomization is done using online websites so that each block contains 6 patients.

Settings and conduct

Patients admitted to Imam Reza Hospital in Mashhad are enrolled to the study after obtaining informed consent, considering the inclusion and exclusion criteria. These patients are randomly divided into intervention and control groups. Finally, one-month mortality is compared between the two groups.

Participants/Inclusion and exclusion criteria

1- The patient has received remdesivir and corticosteroids and antibiotics and anticoagulants 2- At least one day and at most 5 days have passed since the patient's hospitalization. 3- O₂ saturation for 10 minutes without oxygen is less than 89 and more than 75 4- Age between 18 to 75 year 5- Does not have a history of G6PD Deficiency 6- Absence of chronic renal failure with GFR <30 7- Absence of heart failure with EF<40% 8- Does not have COPD with CO₂>45 9- The patient is not intubated 10- Does not have systolic Blood Pressure <90 11- Do not take SSRI, MAO Inhibitor drugs 12- Has not received plasma therapy, IVIG, hemoperfusion, Tocilizumab and plasmapheresis before administration of methylene blue 13- Does not be pregnant 14- The patient should be conscious

Intervention groups

Patients who are treated with methylene blue in addition to remdesivir, anticoagulants, corticosteroids, and antibiotics form the intervention group. In the control group, patients are treated only with remdesivir, anticoagulants, corticosteroids and antibiotics.

Main outcome variables

One-month mortality rate

General information

Reason for update

The sample size reduction from 87 to 65 participants in each group was done after the approval of the ethics committee of the university.

Acronym

IRCT registration information

IRCT registration number: **IRCT20200409047007N2**
Registration date: **2021-11-29, 1400/09/08**
Registration timing: **registered_while_recruiting**

Last update: **2023-10-15, 1402/07/23**

Update count: **1**

Registration date

2021-11-29, 1400/09/08

Registrant information

Name

Mohsen Seddigh-Shamsi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 51 3859 8818

Email address

seddighshamsim@mums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-09-16, 1400/06/25

Expected recruitment end date

2022-03-16, 1400/12/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of methylene blue on acute respiratory distress syndrome in Covid-19 disease

Public title

The effect of methylene blue on acute respiratory distress syndrome in Covid-19 disease

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

The patient has received remdesivir and corticosteroids and antibiotics and anticoagulants At least one day and at most 5 days have passed since the patient's hospitalization. O2 saturation for 10 minutes without oxygen is less than 89 and more than 75 Age between 18 to 75 year Does not have a history of G6PD Deficiency Absence of chronic renal failure with GFR <30 Absence of heart failure with EF<40% Does not have COPD with CO2>45 The patient is not intubated Does not have systolic Blood Pressure <90 Do not take SSRI, MAO Inhibitor drugs Has not received plasma therapy, IVIG, hemoperfusion, Tocilizumab and plasmapheresis before administration of methylene blue Does not be pregnant The patient should be conscious

Exclusion criteria:

Patient dissatisfaction History of allergy or gastrointestinal intolerance to methylene blue

Age

From **18 years** old to **75 years** old

Gender

Both

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **130**

Randomization (investigator's opinion)

Randomized

Randomization description

Simple randomization is done using online websites so that each block contains 6 patients. The generated sequence will be placed in sealed, opaque and numbered envelopes.

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics Committee of Mashhad University of Medical Sciences

Street address

Department of Internal Medicine, Imam Reza Hospital, Shariati Square

City

Mashhad

Province

Razavi Khorasan

Postal code

9137913316

Approval date

2021-09-14, 1400/06/23

Ethics committee reference number

IR.MUMS.REC.1400.171

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

COVID 19 Disease

ICD-10 code

B34.2

ICD-10 code description

Coronavirus infection, unspecified

Primary outcomes**1****Description**

mortality

Timepoint

One month after entering the study

Method of measurement

Patient death

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: Patients in this group receive methylene blue in addition to conventional therapies (corticosteroids, anticoagulants, remdesivir, and antibiotics). Methylene blue is given to the patient in the form of a sachet to be dissolved in a glass of lukewarm water and drunk after one hour. The drug is prescribed every 8 hours on the first and second day and every 12 hours from the third day until discharge.

Category

Treatment - Drugs

2

Description

Control group: Patients in this group receive only conventional therapies, including oxygen, corticosteroids, anticoagulants, Remdesivir and antibiotics.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Reza Hospital

Full name of responsible person

Dr Mohsen Seddigh-Shamsi

Street address

Department of Internal Medicine, Imam Reza Hospital, Shariati Square

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Email

seddighshamsim@mums.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Dr Majid Ghayour Mobarhan

Street address

Deputy of Research and Technology, Central University Building, next to Hoveyzeh Cinema, University Street.

City

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9138813944

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+98 51 3841 1538

Email

GhayourM@mums.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Mashhad 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

Mashhad University of Medical Sciences

Full name of responsible person

Dr Zahra-Sadat Sanei

Position

Resident of Internal Medicine

Latest degree

Medical doctor

Other areas of specialty/work

Internal Medicine

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zahrasanei93@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Dr Mohsen Seddigh-Shamsi

Position

Associate professor

Latest degree

Subspecialist

Other areas of specialty/work

Hematology Oncology

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Department of Internal Medicine, Imam Reza Hospital, Shariati Square

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Person responsible for updating data

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Dr Mohsen Seddigh-Shamsi

Position

Associate professor

Latest degree

Subspecialist

Other areas of specialty/work

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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

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

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

After collecting and analyzing the data, the results will be made available to the public in the form of articles.

When the data will become available and for how long

After the publication of the article

To whom data/document is available

physicians

Under which criteria data/document could be used

There are no restrictions

From where data/document is obtainable

Dr Mohsen Seddigh Shamsi, Mashhad University of
Medical Science

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

Refer to the project supervisor

Comments