

# 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

##### City

Mashhad

##### Province

Razavi Khorasan

##### Postal code

9137913316

##### Phone

+98 51 3859 8818

##### 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

Mashhad

##### Province

Razavi Khorasan

##### Postal code

9138813944

##### Phone

+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

##### Street address

Department of Internal Medicine, Imam Reza Hospital, Shariati Square

##### City

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##### Province

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##### Postal code

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##### Phone

+98 51 3859 8818

##### Email

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

##### Street address

Department of Internal Medicine, Imam Reza Hospital, Shariati Square

##### City

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##### Province

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**Postal code**

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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**

Hematology Oncology

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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**