

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of chest expansion exercises on arterial blood oxygen saturation in hospitalized patients with covid 19

Protocol summary

Study aim

Determining the effect of chest expansion exercises on arterial blood oxygen saturation in hospitalized patients with covid-19

Design

Clinical trial with control group, with parallel groups, single blind, randomized

Settings and conduct

Patients admitted to Boali zahedan Hospital will be randomly divided into two groups. One group will be treated with routine exercises and one group will be treated with chest expansion exercises in addition to routine exercises. Variables will be measured before treatment. After the variables were measured, the treatment will be done for both groups during 7 days (7 times a week) and 3 sessions (morning-noon-night) and each exercise will be done 10 times. The results will be recorded once before the start of the exercises, once in the fourth session and once after the end of the 7th session, i.e. in the eighth session. Single blind method. The result recording technician is not aware of the intervention.

Participants/Inclusion and exclusion criteria

Entry conditions: Patients with a definite diagnosis of covid-19, Blood oxygen saturation level 75-90%, Age 25-55 years, Pulmonary involvement with corona pattern, Patients who have at least two lobes of the lungs affected by the coronavirus, Patients under oxygen therapy, Patients treated with remdesivir and dexamethasone, Patients admitted to BoAli Hospital, Patients for whom the infectious disease doctor has asked for respiratory physiotherapy consultation
Non-entry conditions: Patients hospitalized in Icu who need intubation, Severely ill patients who are repentant, Pregnancy, Patients with a history of cardiac arrhythmias and other respiratory diseases that have lung involvement.

Intervention groups

control group: Routine exercises (diaphragmatic

breathing-pursed-Lip breathing) Intervention group: chest expansion exercises

Main outcome variables

Oxygen saturation level of arterial blood, Severity of chest pain, Severity of headache

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220611055133N1**

Registration date: **2023-01-29, 1401/11/09**

Registration timing: **registered_while_recruiting**

Last update: **2023-01-29, 1401/11/09**

Update count: **0**

Registration date

2023-01-29, 1401/11/09

Registrant information

Name

Fatemeh Jadidoleslami ghaleh no

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 54 3322 1521

Email address

pt.nikaaa@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-12-05, 1401/09/14

Expected recruitment end date

2023-03-05, 1401/12/14

Actual recruitment start date

empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effect of chest expansion exercises on arterial blood oxygen saturation in hospitalized patients with covid 19

Public title
The effect of chest expansion exercises on arterial blood oxygen saturation in patients with covid19

Purpose
Supportive

Inclusion/Exclusion criteria
Inclusion criteria:
Patients with definite diagnosis of covid-19 by PCR test
Blood oxygen saturation level 75-93 % by pulse oximeter
Age 25 -55 years Pulmonary involvement with corona pattern in lung CT SCAN or Chest X-ray Patients who have at least two lobes of the lungs affected by the coronavirus Patients under oxygen therapy Patients treated with remdesivir and dexamethasone Patients hospitalized in Boali Zahedan hospital Patients for whom the infectious disease doctor has asked for respiratory physiotherapy consultation Patients who are able to understand and perform breathing exercises Patients who voluntarily consent to participate in the study
Exclusion criteria:
Patients hospitalized in Icu who need intubation A mild form of the disease that does not require hospitalization Severely ill patients who are intubated Pregnancy Patients with a history of cardiac arrhythmias and other respiratory diseases that have lung involvement Tachycardia patients whose breathing exercises increase their heart Rate Patients who have not completed treatment sessions

Age
From **25 years** old to **55 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **42**

Randomization (investigator's opinion)
Randomized

Randomization description
The non-probability sampling method is easy (available) The random allocation of patients to two groups is done by the permutation block stratified randomization method. In such a way that first the eligible referring patients are classified according to age and gender in the order of entry. Then based on blocks of 4 (consisting of two groups A and B and two repetitions for each) which are randomly selected from all the possible states of permutations are selected and assigned to the desired group. These blocks were created using statistical

software R version 4.0.2 .

Blinding (investigator's opinion)
Single blinded

Blinding description
In the research , a one_way blind method is used so that the technician recording the results will not be aware of the desired intervention

Placebo
Not used

Assignment
Parallel

Other design features
The study population :All patients confirmed with covid -19 by PCR test referring to BoAli Hospital in zahedan

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Zahedan University of Medical Sciences

Street address

Dr.Hesabi Square - Medical Sciences Campus

City

Zahedan

Province

Sistan-va-Balouchestan

Postal code

9816743463

Approval date

2022-04-17, 1401/01/28

Ethics committee reference number

IR.ZAUMS.REC.1401.070

Health conditions studied

1

Description of health condition studied

Oxygen saturation level of arterial blood

ICD-10 code

U07.1

ICD-10 code description

covid-19,virus identified

2

Description of health condition studied

Severity of chest pain

ICD-10 code

ICD-10 code description

3

Description of health condition studied

Severity of headache

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Oxygen saturation level of arterial blood

Timepoint

It will be measured and recorded once before the start of the exercises, once in the fourth session and once after the end of the seven sessions, i.e. in the eighth session.

Method of measurement

Pulse oximeter device

2

Description

Severity of chest pain

Timepoint

It will be measured and recorded once before the start of the exercises, once in the fourth session and once after the end of the seven sessions, i.e. in the eighth session.

Method of measurement

Visual Analogue Scale

3

Description

Severity of headache

Timepoint

It will be measured and recorded once before the start of the exercises, once in the fourth session and once after the end of the seven sessions, i.e. in the eighth session.

Method of measurement

Visual Analogue Scale

Secondary outcomes

empty

Intervention groups

1

Description

Control group: Routine exercises (diaphragmatic breathing-pursed-Lip breathing) In the group of routine exercises, diaphragmatic breathing and pursed-lip breathing will be taught to the patient from the first day of the exercises. The patients are asked to do the exercises for 7 days and 3 sessions every day (morning-noon-evening) and each exercises 10 times. Then the results are once before the start of the exercises, once in the fourth session and once after the end of the 7 sessions, the treatment will be recorded in the eighth session.

Category

Rehabilitation

2

Description

Intervention group: chest expansion exercises. In the group of chest expansion exercises, the first, second and third exercises will be taught to the patient on the first day of the exercises. Also, the patient will be taught the fourth exercise on the second day and the fifth exercise on the third day. The patients are asked to do the exercises for 7 days and 3 sessions every day (morning-noon-evening) and each exercises 10 times. Then the results are once before the start of the exercises, once in the fourth session and once after the end of the 7 sessions. The treatment will be recorded in the eighth session.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

BoAli Hospital

Full name of responsible person

Dr. Shahabuddin Mashai

Street address

Shariati Ave, Shohada Square

City

Zahedan

Province

Sistan-va-Balouchestan

Postal code

98136-17697

Phone

+98 54 3322 8101

Email

Boalihospital@zaums.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Zahedan University of Medical Sciences

Full name of responsible person

Dr. Mohsen Taheri

Street address

Medical Sciences Campus, Dr. Hesabi Square

City

Zahedan

Province

Sistan-va-Balouchestan

Postal code

9816743463

Phone

+98 54 3329 5789

Email

amirt114@gmail.com

Grant name

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

Yes

Title of funding source

Zahedan 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

Zahedan University of Medical Sciences

Full name of responsible person

Ahmad Reza Askari Ashtiany

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Doctor Hesabi Square, Faculty of Rehabilitation,
Zahedan University of Medical Sciences

City

Zahedan

Province

Sistan-va-Balouchestan

Postal code

9816743463

Phone

+98 54 3329 5836

Fax

+98 54 3329 5836

Email

ahmadaskary@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Zahedan University of Medical Sciences

Full name of responsible person

Ahmad Reza Askari Ashtiani

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Doctor Hesabi Squire, Faculty of Rehabilitation,
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Phone

+98 54 3329 5836

Fax

+98 54 3329 5836

Email

ahmadaskary@gmail.com

Person responsible for updating data

Contact

Name of organization / entity

Zahedan University of Medical Sciences

Full name of responsible person

Ahmadreza Askari Ashtiyani

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Doctor Hesabi Squire, Faculty of Rehabilitation,
Zahedan university of Medical Sciences

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Province

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9816743463

Phone

+98 54 3329 5836

Fax

+98 54 3329 5836

Email

ahmadaskary@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)

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

Study Protocol

Undecided - It is not yet known if there will be 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