Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 exercises 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)
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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 traetment 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
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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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
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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