Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Nov 2026

Comparison of the safety and efficacy of Razi SARS-CoV-2 recombinant Spike protein (Razi Cov Pars) and Sinopharm vaccines in adults aged 18 and over, a phase III randomised, double blind, non-inferiority clinical trial

Protocol summary

Study aim

Comparison of safety and efficacy of recombinant spike protein COVID-19 vaccine developed by RAZI institute (Razi Cov Pars) and Sinopharm vaccine

Design

Phase III, two parallel and equal groups, randomized, double blind, non-inferiority design; will be conducted on 41128 volunteers.

Settings and conduct

1. Razi Vaccine and Serum Research Institute, Hesarak, Karaj 2. Kharazi Highway, Iran Mall Shopping Center, Business Negotiation Center, Tehran 3. Shahrara, Rasoul, Tehran 4. Mobile unit

Participants/Inclusion and exclusion criteria

Inclusion criteria: 18 years old and over; Access to Internet and smart phone; No current COVID -19; Non pregnant (women); Signed informed consent. Exclusion criteria: Any ongoing or new diagnose of symptomatic, acute or chronic illness requiring continuous ongoing medical or surgical care; Breastfeeding; received any type of COVID-19 vaccine; History of sever allergic diseases or history of anaphylaxis to any drug, vaccine or food; History of uncontrolled serious psychiatric disorder; Current substance or alcohol abuse; Splenectomy for any reason; Close contact with a confirmed COVID-19 within the last two weeks

Intervention groups

The two study groups consists of a vaccine group receiving Razi Cov Pars vaccine, and a group receiving Sinopharm vaccine. They will receive two vaccine injections on day 0 and 21 followed by intranasal spray on day 51.

Main outcome variables

Occurrence of COVID-19 disease confirmed by PCR test 2 weeks after the 2nd vaccine dose; Occurrence of moderate and severe Covid-19 disease or death due to it 2 weeks after the 2nd vaccine dose; Immediate abnormal vital signs & anaphylactic reactions following vaccination; Local & Systemic adverse events within the first week post vaccination; SAEs, SUSARs, MAAEs, up to 6 months after the second vaccine dose; and Specific secretory IgA level in blood and saliva samples.

General information

Reason for update

Add 3 new centers; Add two non-random arms; Change some inclusion and exclusion criteria

Acronym

IRCT registration information

IRCT registration number: **IRCT20201214049709N3**
Registration date: **2021-08-29, 1400/06/07**
Registration timing: **prospective**

Last update: **2024-03-26, 1403/01/07**
Update count: **3**

Registration date

2021-08-29, 1400/06/07

Registrant information

Name

Ali Eshaghi

Name of organization / entity

Razi Vaccine and Serum Research Institute

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date
2021-09-01, 1400/06/10
Expected recruitment end date
2021-12-01, 1400/09/10
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparison of the safety and efficacy of Razi SARS-CoV-2 recombinant Spike protein (Razi Cov Pars) and Sinopharm vaccines in adults aged 18 and over, a phase III randomised, double blind, non-inferiority clinical trial

Public title
Comparison of the safety and efficacy of Razi SARS-CoV-2 recombinant Spike protein (Razi Cov Pars) and Sinopharm vaccines
Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion criteria:
18 years of age or older; Having access to internet and smart phone; No current COVID-19; No pregnancy; No plan to have children in the next 6 months and willing to use at least one effective method of contraception; Signed informed consent form.
Exclusion criteria:
Any current or new diagnosis of acute or chronic illness requiring continuous ongoing medical care Breastfeeding; History of receiving any COVID -19 vaccine; Received blood and/or any blood products and/or immunoglobulins within three months preceding the screening day; Long-term use of immunosuppressive drugs or systemic corticosteroids within the past 4 months; History of allergic diseases such as angioedema or anaphylactic reactions to any drug, vaccine or food; Recent diagnosis or treatment of cancers except basal cell carcinoma and In-situ cervical cancer History of uncontrolled serious psychiatric illnesses; History of blood disorders (dyscrasia, coagulopathy, platelet deficiency or disorder, or deficiency of blood clotting factors); History of chronic neurological diseases (including seizures and epilepsy); Current substance or alcohol abuse; Splenectomy for any reason; Close contact with a confirmed COVID-19 case within two weeks before the first vaccine dose; History of diagnosis or treatment for HIV; Chronic unstable diseases in the last 4 weeks, including hospitalization due to surgery, deterioration of one organ function, the need to add new drugs or serious dose adjustments to existing drugs.
Age
From **18 years** old
Gender
Both

Phase
3
Groups that have been masked
- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser
- Data and Safety Monitoring Board

Sample size
Target sample size: **41128**
Randomization (investigator's opinion)
Randomized
Randomization description
This study uses both randomized and non-randomized arms. Block randomization method with variable block sizes of 4 and 6 in STATA will be used to create the random sequence in randomized arms. For the purpose of concealment, a unique code will be assigned to each intervention the participants receive, and all subjects will be identified with this code until the end of the study (concealment code).
Blinding (investigator's opinion)
Double blinded
Blinding description
In this study, the control group will receive the Sinopharm vaccine, which has different color, volume and packaging from Razi Cov Pars. Therefore, blinding will be performed by a person who will be responsible for preparing and inoculating the vaccine. This is the only person who will not be blind to the intervention given. Once the participant becomes eligible to receive the vaccine, a concealment/randomization code will be assigned to the volunteer and the vaccine type will be displayed on the screen of the vaccinator until the inoculation is confirmed. To protect the blinding in the participant, the syringe's cylinder will be covered to conceal the content of the syringe. Non-randomized arms that were added to the study later on, are not blind.
Placebo
Not used
Assignment
Parallel
Other design features
In addition to the randomized arms, two non-randomised and open label arms were added to the study. Participants will receive one of the Razi or Sinofarm vaccines by their own choice in these additional arms.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
National Research Ethics Committee
Street address
Floor 13, Block A, Ministry of Health & Medical Education Headquarters, Between Zarafashan & South Falamak, Qods Town, Tehran, Iran.
City

Tehran

Province

Tehran

Postal code

7334144696

Approval date

2021-08-24, 1400/06/02

Ethics committee reference number

IR.NREC.1400.007

Health conditions studied

1

Description of health condition studied

Acute Respiratory Distress Syndrome due to SARS-CoV-2

ICD-10 code

U07.1

ICD-10 code description

COVID-19, virus identified

Primary outcomes

1

Description

Occurrence of any symptomatic confirmed COVID-19 disease: Number and percentage of confirmed COVID-19 disease two weeks after second vaccine dose

Timepoint

Any time between the 14 days after second vaccine dose and the end of study

Method of measurement

Diagnosis of COVID-19 disease will be based on Iran's Ministry of Health's guideline and a positive PCR test.

Secondary outcomes

1

Description

Occurrence of confirmed moderate or severe illness or death due to COVID-19: Number and percentage of moderate, severe illness or death due to COVID-19.

Timepoint

Any time, two weeks after the second dose until the end of study

Method of measurement

PCR test and Clinical evaluations. Severity of Covid-19 will be classified according to NIH criteria.

2

Description

Occurrence of confirmed severe illness or death due to COVID-19: Number and percentage of severe illness or death due to COVID-19.

Timepoint

Any time, two weeks after the second dose until the end of study

Method of measurement

PCR test and Clinical evaluations. Severity of Covid-19 will be classified according to NIH criteria.

3

Description

Abnormal vital signs and anaphylactic reactions up to 30 minutes after vaccination: number and percentages of participants who develop abnormal vital signs within half an hours of receiving the vaccine at each doses will be recorded. Abnormal vital signs include temperature, respiratory rate, heart rate, systolic and diastolic blood pressure. Anaphylaxis is defined as systemic hypersensitivity with at least two of the following signs and symptoms: erythema, pruritus, urticaria and angioedema, bronchospasm, laryngeal edema, dizziness, hypotension, nausea, shortness of breath, wheezing, arrhythmia, cyanosis, vomiting, diarrhea, abdominal pain.

Timepoint

Immediately and up to half an hours after vaccination

Method of measurement

Clinical examination

4

Description

Local adverse events within the first week post-vaccination: including pain, tenderness, erythema or redness, swelling and stiffness that will be assessed based on the severity score, duration and peak intensity.

Timepoint

Daily assessment up to six days following 1st and 2nd vaccine dose

Method of measurement

They will be assessed through e-Diary card. This card is provided in the mobile application.

5

Description

Systemic adverse events within the first week post-vaccination: including nausea and vomiting, diarrhea, headache, fatigue, muscle pain that will be assessed based on the severity score, duration and peak intensity.

Timepoint

Daily assessment up to six days following each vaccine dose

Method of measurement

They will be assessed through e-Diary card. This card is provided in the mobile application

6

Description

Serious adverse events (SAEs), Suspected Unexpected Serious Adverse Reaction (SUSARs), Medically Attended Adverse Events (MAAEs), up to 6 month after 2nd vaccine dose

Timepoint

Weekly until the end of study

Method of measurement

In the form of weekly questions and through the mobile phone application

7

Description
Specific secretory IgA level: This will be measured in a subgroup of participants in saliva and blood samples
Timepoint
two week after receiving the intranasal dose
Method of measurement
Elisa

Intervention groups

1

Description
Intervention group1: Participants in this group will receive two doses (IM) of RAZI recombinant spike protein vaccine 21 days apart followed by a nasal spray 51 days after the first dose (day 0).
Category
Prevention

2

Description
Intervention group2: Participants in this group will receive two doses (IM) of Sinopharm vaccine 21 days apart followed by a nasal spray 51 days after the first dose (day 0). Nasal spray contains an adjuvant made in Razi Institute.
Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Razi Vaccine and Serum Research Institute
Full name of responsible person
Dr Mojtaba Noofeli
Street address
Hesarak, Beheshti Ave
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2

Recruitment center
Name of recruitment center
Iran Mall Shopping Center
Full name of responsible person
Dr Fariba Sadeghi
Street address
Shahid Kharazi Highway, Iran Mall Shopping Center, Commercial Negotiation Center
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Postal code
1496991675
Phone
+98 26 3457 0038
Email
Far_sade@yahoo.com

3

Recruitment center
Name of recruitment center
Rasoul Akram Hospital
Full name of responsible person
Seyyed Amin Setarehdan
Street address
Corner of Mansouri, Niayesh, Satarkhan Av, Tehran
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Province
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Postal code
1445613131
Phone
+98 21 6653 8539
Email
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4

Recruitment center
Name of recruitment center
Mobile recruitment center
Full name of responsible person
Dr Fariba Sadeghi
Street address
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-
Province
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Postal code
-
Phone
+98 21 6653 8539
Email
Far_sade@yahoo.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Razi Vaccine and Serum Research Institute
Full name of responsible person
Ali Eshaghi

Street address
Beheshti Ave, Hesarak, Karaj, Alborz Province
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Postal code
3197619751
Phone
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a.Eshahghi@rvsri.ac.ir

Grant name

Grant code / Reference number

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

Title of funding source
Razi Vaccine and Serum Research Institute

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
Industry

Person responsible for general inquiries

Contact

Name of organization / entity
Razi Vaccine and Serum Research Institute
Full name of responsible person
Mohammad Hossein Fallah Mehrabadi
Position
Faculty member
Latest degree
Ph.D.
Other areas of specialty/work
Epidemiology
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Person responsible for scientific inquiries

Contact

Name of organization / entity
Iran University of Medical Sciences
Full name of responsible person
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Associate Professor
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Person responsible for updating data

Contact

Name of organization / entity
Razi Vaccine and Serum Research Institute
Full name of responsible person
Ladan Mokhberossaf
Position
Assistant Professor
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Specialist
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
Yes - There is a plan to make this available

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

Deidentified IPD related to outcome will be shared.

When the data will become available and for how long

The access period will begin once the study is complete and the main results have been published in peer reviewed journals.

To whom data/document is available

The data that have been published in peer reviewed journals, will be available just for academic researchers.

Under which criteria data/document could be used

The proposed study protocol should be submitted to RAZI vaccine and serum research institute and approved by its scientific and technical advisory committee.

From where data/document is obtainable

Researchers will submit their request to Dr. Mohammad Hossein Fallah at the following email address (mhf2480@yahoo.com)

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

Data will be made available after consideration and approval by the relevant authorities from Razi Vaccine and Serum Research Institute.

Comments

Trial results

Please tick if results have been published

Yes

Summary result posting date

2024-03-26, 1403/01/07

Table of baseline comparison

Participant flow diagram

Table of variable outcomes' results

Table of adverse events

First publication date

2024-03-03, 1402/12/13

Abstract of published paper

Background: We conducted a phase III, non-inferiority trial comparing safety and efficacy of RCP recombinant spike protein Covid-19 vaccine to BBIBP (Sinopharm). Methods: Adult Iranian population received RCP or BBIBP in a randomized, double blind and an additional non-randomized open labeled trial arms. Eligible participants signed a written informed consent and received two intramuscular injections three weeks apart. In the randomized arm, an intranasal dose of vaccine or adjuvant-only preparation were given to the RCP and BBIBP recipients at day 51 respectively. Participants were actively followed for up to 4 months for safety and efficacy outcomes. Primary outcome was PCR + symptomatic Covid-19 disease two weeks after the second dose. The non-inferiority margin was 10% of reported BBIBP vaccine efficacy (HR = 1.36). Results: We recruited 23,110 participants (7224 in the randomized and 15,886 in the nonrandomized arm). We observed 604 primary outcome events during 4 months of active followup including 121 and 133 in the randomized and 157 and 193 cases in the non-randomized arms among recipients of RCP and BBIBP respectively. Adjusted hazard ratios for the primary outcome in those receiving RCP compared with BBIBP interval were 0.91 (0.71–1.16) and 0.62 (0.49–0.77) in the randomized and non-randomized arms respectively. The upper boundary of 99.1% confidence interval of HR = 0.91 (0.67–1.22) remained below the margin of noninferiority in the randomized arm after observing the early stopping rules using O'Brien Fleming method. Conclusion: Our study showed that the RCP efficacy is non-inferior and its safety profile is comparable to the BBIBP.