Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Efficacy and safety of peginterferon beta-1a (CinnaGen) versus CinnoVex® (CinnaGen) in reducing the annualized relapse rate (ARR) in participants with relapsing-remitting multiple sclerosis: A phase III, randomized, parallel, non-inferiority study.

Protocol summary

Study aim
Pegylated interferon beta-1a (CinnaGen) is non-inferior to CinnoVex® (CinnaGen) for treatment of relapsing-remitting Multiple Sclerosis.

Design
Phase III, randomized, parallel-group, and non-inferiority. The patient randomization process will be centrally conducted by simple randomization method (complete algorithm) in PASS software for a total of 168 patients (with a 1: 1 allocation ratio). After the randomization procedure, a code will be allocated to each patient that will be used as patient identifier throughout the study.

Settings and conduct
The trial will be performed by principle and co-investigators in Tehran (Sina, Imam Hossein, and Amiralam hospitals), Isfahan (Kashani hospital), Mashhad (Ghaem hospital), Sari (Buali hospital), Tabriz (Imam Reza hospital) and Rasht (Ghaem hospital), Hamedan (Sina).

Participants/Inclusion and exclusion criteria
Inclusion Criteria: Age 18-50 years, RRMS diagnosis, EDSS 0–5, At least one relapse within the past 12 months, Signed Informed Consent. Exclusion Criteria: Other types of MS, Surgery or treatment with other agents to treat MS symptoms or underlying disease as specified in the protocol, Abnormal screening lab tests, History of any medical condition that would preclude participation in the trial, MS relapse within 30 days prior to randomization and/or not stabilized from a previous relapse prior to randomization, Pregnancy and lactation, Unwillingness or inability to comply with the requirements of the protocol, The decision of the Investigator and Others specified in the protocol.

Intervention groups
Group I: Pegylated interferon beta-1a (CinnaGen), Physioject™ autoinjector, 125mcg, subcutaneous, every 2 weeks for 96 weeks. Group II: CinnoVex® (CinnaGen), prefilled syringe, 30mcg, intramuscular, once a week for 96 weeks.

Main outcome variables
The annualized relapse rate in a 96 weeks study period

General information

Reason for update
AMENDMENT *Change in Randomization *Changes in study schedule from month to week

Acronym

IRCT registration information
IRCT registration number: **IRCT201612306135N8**
Registration date: **2017-01-14, 1395/10/25**
Registration timing: **prospective**

Last update: **2020-11-25, 1399/09/05**
Update count: **3**

Registration date
2017-01-14, 1395/10/25

Registrant information

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Recruitment status
Recruitment complete

Funding source

CinnaGen Pharmaceutical Company

Expected recruitment start date
2018-03-15, 1396/12/24
Expected recruitment end date
2019-09-22, 1398/06/31
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Efficacy and safety of peginterferon beta-1a (CinnaGen) versus CinnoVex® (CinnaGen) in reducing the annualized relapse rate (ARR) in participants with relapsing-remitting multiple sclerosis: A phase III, randomized, parallel, non-inferiority study.

Public title
Efficacy and safety of peginterferon beta-1a (CinnaGen) in relapsing-remitting multiple sclerosis patients.
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Age 18-50 years Relapsing-remitting multiple sclerosis (RRMS) (McDonald criteria 2010) Expanded Disability Status Scale (EDSS) is 0–5 At least one relapse having occurred within the past 12 months Subjects have refused alternative treatments and other available therapies Ability to understand the purpose and risks of the study and provide signed and dated an informed consent Negative pregnancy test for childbearing women
Exclusion criteria:
Primary progressive, secondary progressive, or progressive- relapsing MS Female subjects considering becoming pregnant while in the study or currently breastfeeding Subjects for whom MRI was contraindicated, i.e., who had pacemakers or were allergic to gadolinium,... Unwillingness or inability to comply with the requirements of the protocol Pre-specified laboratory abnormalities History of any clinically significant that would preclude participation in a clinical trial History of malignant disease (with the exception of squamous cell carcinomas of the skin that are cured) History of seizure disorder or unexplained blackouts OR history of a seizure within 3 months prior to Baseline History of suicidal ideation or an episode of severe depression within 3 months prior to Baseline Alanine transaminase/serum glutamate pyruvate transaminase (ALT/SGPT) greater than 2 times the upper limit of normal Aspartate transaminase/serum glutamic oxaloacetic transaminase (AST/SGOT) greater than 2 times the upper limit of normal Bilirubin greater than 1.5 times the upper limit of normal Total white blood cell count (WBC) <4000 /mm3 Absolute Neutrophil Count (ANC) of < 1500 /mm3 Platelet count <120,000 c/mm3 Hemoglobin <10 g/dL in female subjects; <11 g/dL in male subjects Serum creatinine upper limit of normal lab value An MS relapse that has occurred within the 30 days prior to randomization or the subject has not stabilized from a previous relapse prior Elective surgery performed from 2 weeks prior or scheduled through the end of the study Any prior treatment with Total Lymphoid Irradiation, Cladribine, T-cell Vaccine, Natalizumab, Rituximab, BIIB017, Fingolimod, Dimethyl fumarate, and Teriflunomide Prior treatment within 1 with Cyclophosphamide– Mitoxantrone Prior treatment within 6 months with Cyclosporine, Plasma exchange, Intravenous immunoglobulin (IVIG), Azathioprine, Methotrexate Any prior treatment within 6 months with interferon Prior treatment within 30 days prior with Systemic Corticosteroids Prior treatment with Glatiramer Acetate within 4 weeks prior to randomization Treatment with another investigational drug within the 6 months prior to randomization Other reasons, that in the opinion of the investigator, made the subject unsuitable for enrolment
Age
From **18 years** old to **50 years** old
Gender
Both

Phase
3
Groups that have been masked
No information
Sample size
Target sample size: **168**
Randomization (investigator's opinion)
Randomized
Randomization description
The patient randomization process will be centrally conducted by simple randomization method (complete algorithm) in PASS software for a total of 168 patients (with a 1: 1 allocation ratio). After the randomization procedure, a code will be allocated to each patient that will be used as patient identifier throughout the study. The code will consist of four numbers (corresponding to the randomization number), 4 initials (corresponding to the first two letters of first name, first two letters of surname), and 3 numbers (center code), e.g. ABCD001PE3-0001. Randomization numbers will be determined sequentially.
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
Tehran University of Medical Sciences

Street address
TUMS Ethic Committee, 6th floor, Central Building, Ghods st, Keshavarz Blvd., Tehran, Iran
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Approval date
2016-11-05, 1395/08/15
Ethics committee reference number
IR.TUMS.REC.1395.2868

2

Ethics committee
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Approval date
2016-10-17, 1395/07/26
Ethics committee reference number
IR.TBZMED.REC.1395.759

Health conditions studied

1

Description of health condition studied
Multiple sclerosis
ICD-10 code
G35
ICD-10 code description
Multiple sclerosis

Primary outcomes

1

Description
Annual relapse rate
Timepoint
Ralapse rate counts during 96 weeks/ every 4 weeks visits
Method of measurement
A relapse is defined as an episode of neurological symptoms that happens at least 30 days after any previous episode began, lasts at least 24 h and is not attributable to another cause and occurs in the absence of an infection or fever.

Secondary outcomes

1

Description
Number of new or newly enlarging hyperintense lesions on T2-weighted images (relative to baseline MRI)
Timepoint
Baseline, 24th, 48th, 96th week
Method of measurement
MRI evaluation

2

Description
Proportion of patients with 12 weeks of sustained disability progression
Timepoint
During 96 weeks of study follow up
Method of measurement
Clinical evaluation

3

Description
Gadolinium-enhancing lesions, New active lesions (T2), Volume of new or newly enlarging T2 hyperintense, gadolinium-enhancing, and T1 hypointense lesions, brain atrophy
Timepoint
24th, 48th, 96th week
Method of measurement
MRI evaluation

4

Description
Any - Adverse events (AEs), Adverse drug reactions (ADR) including: o Flu-like symptoms, injection site reaction (redness, pain, itching, necrosis), o Rising AST, ALT or ALP 2.5 times more than normal value,or Hyperbilirubinemia: 1.5 Times more than Upper normal limit, Leukopenia (WBC <3000), Thrombocytopenia (Platelet count < 100,000),..
Timepoint
During 96 weeks of study follow up
Method of measurement
Clinical and laboratory evaluation

Intervention groups

1

Description
Intervention group 1: Pegylated interferon beta-1a (CinnaGen) autoinjector (Physioject™) for patients with dose of 125micrograms, subcutaneous (S/C) injection every 2weeks for 96 weeks
Category
Treatment - Drugs

2

Description
Intervention group 2: CinnoVex® (CinnaGen) 30 mcg, prefilled syringe, injected intramuscularly once a week for 96 weeks

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
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Full name of responsible person
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Recruitment center

Name of recruitment center
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Recruitment center

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Recruitment center

Name of recruitment center
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Name of recruitment center
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Name of recruitment center
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Sponsors / Funding sources

1

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Web page address
http://www.cinnagen.com

Grant name

Grant code / Reference number

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

Title of funding source
CinnaGen Pharmaceutical Company

Proportion provided by this source
100

Public or private sector
Private

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Persons

Person responsible for general inquiries

Contact

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Orchidpharmed company

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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