A non-interventional post-authorisation safety study to investigate the risk of mortality in multiple sclerosis patients treated with alemtuzumab (LEMTRADA®) relative to comparable multiple sclerosis patients using other disease modifying therapies: a cohort study

First published: 26/08/2021

Last updated: 06/05/2025

Study Finalised

Administrative details

EU PAS number

EUPAS42543

Study ID

50544

DARWIN EU® study

No

Study countries

- [ ] Belgium
- [ ] Czechia
- [ ] Denmark
- [ ] Germany
- [ ] Sweden
- [ ] United Kingdom

Study status

Finalised

Research institutions and networks

Institutions

Parexel International

- [ ] United States

First published: 19/10/2010

Last updated: 10/12/2024

Institution | Non-Pharmaceutical company | ENCePP partner

Leibniz Institute for Prevention Research and Epidemiology - BIPS

- [ ] Germany

First published: 29/03/2010

Last updated: 26/02/2024

Institution | Not-for-profit | ENCePP partner

The Danish Multiple Sclerosis Registry Denmark, AIM-IMA (L'Agence Intermutualiste - Het InterMutualistisch Agentschap) Belgium, The Swedish Multiple Sclerosis Registry Sweden, The Czech Multiple Sclerosis Registry (ReMuS) Czechia, University Hospital of Wales Wales, Cambridge University Hospitals England, Derriford Hospital/ Plymouth University England

Contact details

Study institution contact

Patient Safety and Pharmacovigilance - Pharmacoepidemiology lead Contact-US@sanofi.com

Study contact

Contact-US@sanofi.com

Primary lead investigator

Katja M Hakkarainen

Primary lead investigator

Study timelines

Date when funding contract was signed
Planned: 19/10/2020

Actual: 19/10/2020

Study start date
Planned: 01/05/2021

Actual: 07/09/2021

Date of interim report, if expected
Planned: 31/12/2023

Actual: 19/12/2023

Date of final study report
Planned: 30/09/2024

Actual: 20/09/2024

Sources of funding

- Pharmaceutical company and other private sector

More details on funding

Sanofi-Genzyme

Study protocol

alemtuzumab-lemtrada-pass-mort-protocol-may-2021_Redacted.pdf(2.09 MB)

Redacted_ lem-mortality[csa002]-protocol-amendment-v4.0.pdf(2.02 MB)

Regulatory

Was the study required by a regulatory body?

Yes

Is the study required by a Risk Management Plan (RMP)?

EU RMP category 1 (imposed as condition of marketing authorisation)

Regulatory procedure number

EMEA/H/C/003718

Methodological aspects

Study type

Study type list

Study topic:

Human medicinal product

Study type:

Non-interventional study

Scope of the study:

Assessment of risk minimisation measure implementation or effectiveness

Data collection methods:

Combined primary data collection and secondary use of data

Main study objective:

The primary objective is to ascertain whether multiple sclerosis (MS) patients treated with LEMTRADA have a higher risk of all-cause mortality than comparable MS patients treated with other HE-DMT.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Name of medicine

LEMTRADA

Study drug International non-proprietary name (INN) or common name

ALEMTUZUMAB

Anatomical Therapeutic Chemical (ATC) code

(L04AG06) alemtuzumab

alemtuzumab

Medical condition to be studied

Multiple sclerosis

Population studied

Age groups

Adults (18 to < 46 years)

Adults (46 to < 65 years)

Adults (65 to < 75 years)

Adults (75 to < 85 years)

Adults (85 years and over)

Estimated number of subjects

9000

Study design details

Outcomes

The primary outcome is the all-cause mortality.

The secondary outcome is the cause-specific mortality.

This secondary outcome will be exploratory as it is anticipated that availability and quality of cause-specific mortality data will be variable across data sources.

Data analysis plan

The following statistical analyses will be conducted separately in each data source:

- Descriptive statistics

- Crude and age-standardised mortality rates will be computed by exposure group (LEMTRADA vs other HE-DMT), for all MS patients and by gender.

- Propensity score (PS) model will be constructed in order to create two comparable groups of patients with similar distributions of risk factors (LEMTRADA vs other HE-DMT). PS weight will be computed using the standardised mortality ratio method.

- Risk of death among the LEMTRADA group compared to the other HE-DMT

group will be expressed as hazard ratio (HR) and computed from a PS weighted time-dependent Cox proportional hazards model that will include a time-dependent exposure. A meta-analysis will be performed by iPRI to combine all HR from each data source in order to obtain a global estimate of the risk of death in the LEMTRADA group compared to the other HE-DMT group.

Documents

Study results

alemtuzumab_mort_csa0002_abstract_upload_emahma_22april2025.pdf(198.38 KB)

Study, other information

lem_pass_mort_protocol_may192021.pdf(1.37 MB)

Data management

Data sources

Data source(s)

German Pharmacoepidemiological Research Database

Data sources (types)

Administrative healthcare records (e.g., claims)

Disease registry

Electronic healthcare records (EHR)

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No