The Risk of Serious Infections with Mirikizumab versus Other Biologics among Patients with Ulcerative Colitis: A Secondary Database Study in Japan

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Study Planned

Administrative details

EU PAS number

EUPAS1000000338

Study ID

1000000338

DARWIN EU® study

No

Study countries

☐ Japan

Study description

On 27 March 2023, mirikizumab, a monoclonal antibody that binds to and inhibits IL-23, was authorized in Japan for the treatment of adult patients with moderate to severe ulcerative colitis (UC) who have had an inadequate response with, lost response to, or were intolerant to conventional therapy.

It is reported that UC is associated with an increased risk of infections partially due to impairments of the immune system and use of immunosuppressive medications. Although no increased risk of serious infections comparing mirikizumab and placebo was observed among patients with UC in phase 3 clinical trials, mirikizumab may increase the risk of infections given its pharmacological mechanisms. Furthermore, it is largely unknown whether mirikizumab use, compared with other biologics, is associated with an increased risk of serious infections in routine clinical practice.

Therefore, the objective of this safety study is to examine the incidence of serious infections among patients with a diagnosis of UC who are exposed to mirikizumab compared to patients with a diagnosis of UC who are exposed to other biologics indicated for the treatment of UC in real world clinical practice in Japan.

Study status

Planned

Research institutions and networks

Institutions

Eli Lilly and Company

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Institution

Contact details

Study institution contact

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Study contact

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Primary lead investigator

Jiayi Dong

Primary lead investigator

Study timelines

Date when funding contract was signed

Planned: 21/06/2023

Study start date

Planned: 30/11/2026

Date of final study report

Planned: 30/06/2028

Regulatory

Was the study required by a regulatory body?

Yes

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

Non-EU RMP only

Methodological aspects

Study type

Study type list

Study topic:

Human medicinal product

Study type:

Non-interventional study

Scope of the study:

Safety study (incl. comparative)

Data collection methods:

Secondary use of data

Study design:

This study will employ an incident new user design, limiting the study population to patients who are new users of mirikizumab or the comparator biologic during the patient identification period.

Main study objective:

The objective of this study is to describe the incidence of serious infections and estimate the hazard ratio for serious infections among adult patients 18 years of age and older with a diagnosis of UC who are exposed to mirikizumab versus their propensity score-matched comparators (TNF inhibitors, vedolizumab, or ustekinumab) using Cox proportional hazard models.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Name of medicine

OMVOH

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

MIRIKIZUMAB

Anatomical Therapeutic Chemical (ATC) code

(L04AC24) mirikizumab

mirikizumab

Medical condition to be studied

Colitis ulcerative

Population studied

Short description of the study population

The source population will consist of patients with a diagnosis of UC who are in the claims-based MDV database and have at least one prescription of mirikizumab or a comparator biologic during the patient identification period.

Age groups

Adult and elderly population (≥18 years)

Adults (18 to < 65 years)

Adults (18 to < 46 years)

Adults (46 to < 65 years)

Elderly (≥ 65 years)

Adults (65 to < 75 years)

Adults (75 to < 85 years)

Adults (85 years and over)

Study design details

Setting

The source population will consist of patients with a diagnosis of UC who are in the claims-based MDV database and have at least one prescription of mirikizumab or a comparator biologic during the patient identification period (i.e., on or after 21 June 2023 through 31 May 2026).

Comparators

Three individual comparator cohorts (TNF inhibitor cohort, vedolizumab cohort, and ustekinumab cohort) will be created.

Outcomes

Serious infections

Data analysis plan

Propensity score (PS) matching will be used to balance the covariates between the mirikizumab and comparator cohorts. Three logistic regression models will be used to calculate the propensity of receiving mirikizumab versus receiving (1) a TNF inhibitor, (2) vedolizumab, or (3) ustekinumab.

Each patient in the mirikizumab cohort will be matched with up to 3 patients in the comparator cohort (1:3) based on the PS using nearest neighbour matching (calliper width 0.2 of the standard deviation of the logit score).

Incidence rates of serious infections in matched mirikizumab and comparator cohorts will be computed, defined as number of cases divided by the total person-years of follow-up in each comparison set.

Cox proportional hazard models will be used in all association analyses to estimate hazard ratios and corresponding 95% confidence intervals of serious infections among mirikizumab users compared to PS-matched users of: (1) TNF inhibitors, (2) vedolizumab, and (3) ustekinumab, separately.

Data management

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