Temporal trends in pegloticase infusion reactions across the pre, intra, and post-COVID-19 vaccine eras in U.S. commercial insurance claims (20250232)

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Study Planned

Administrative details

EU PAS number

EUPAS1000001008

Study ID

1000001008

DARWIN EU® study

No

Study countries

United States

Study description

This retrospective temporal trend study evaluates annual and era specific incidence rates of severe infusion reactions among new users of pegloticase with immunomodulator co therapy from 2017–2025. Analyses assess population level trends across pre , intra , and post–COVID 19 vaccination periods, with sensitivity analysis in pegloticase monotherapy users.

Study status

Planned

Research institutions and networks

Institutions

Amgen

United States

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Institution

Contact details

Study institution contact

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Primary lead investigator

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Primary lead investigator

Study timelines

Date when funding contract was signed
Planned: 26/03/2026

Study start date
Planned: 10/08/2026

Data analysis start date
Planned: 10/08/2026

Date of interim report, if expected
Planned: 15/12/2026

Date of final study report
Planned: 31/03/2027

Sources of funding

- Other

More details on funding

Amgen/CfOR Internal Study

Study protocol

Protocol-Published Original pegloticase 20250232 .pdf (725.41 KB)

Regulatory

Was the study required by a regulatory body?

No

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

Not applicable

Methodological aspects

Study type

Study type list

Study topic:

Disease /health condition

Human medicinal product

Study type:

Non-interventional study

Scope of the study:

Disease epidemiology

Data collection methods:

Secondary use of data

Study design:

Retrospective cohort study using U.S. commercial claims (Jan 2017–Sep 2025) to assess trends in severe infusion reactions among new pegloticase users with immunomodulators. Rates evaluated annually and across COVID-19 periods, with comparator analyses for context.

Main study objective:

Primary Objective:

To estimate annual and era-specific incidence rates of severe pegloticase infusion reactions during the pre-, intra-, and post-COVID-19 mass vaccination periods among patients receiving pegloticase with immunomodulator co-therapy (primary analysis) and pegloticase monotherapy (sensitivity analysis).

secondary objectives:

(1) Negative control (contextualization): Using the same outcome definition and time-period framework, estimate annual/era-specific incidence rates of severe infusion reactions among rituximab initiators to evaluate whether there are broad secular changes in coding, detection, or infusion-care patterns unrelated to PEG exposure.

(2) PEG-containing infused comparators (contextualization): Using analogous design and outcome definitions, estimate annual/era-specific incidence rates of severe infusion reactions among initiators of pegaspargase and pegylated liposomal doxorubicin (PLD) to provide context on whether temporal patterns observed for pegloticase are consistent with other PEG-containing infused products.

Study Design

Non-interventional study design

Cross-sectional

Study drug and medical condition

Medicinal product name

KRYSTEXXA

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

PEGLOTICASE

Anatomical Therapeutic Chemical (ATC) code

(M04AX02) pegloticase

pegloticase

Medical condition to be studied

Gout

Population studied

Short description of the study population

The study population will include individuals captured in the Optum Market Clarity closed claims database between January 1, 2017, and September 30, 2025. Eligible participants will contribute observable person-time during the study era(s), with follow-up defined based on data availability within the database. Participants may contribute to one or more study era(s) depending on the duration of their observation time.

Inclusion Criteria (Summary):
Adults (≥18 years) with continuous 12 month enrolment and no prior use of the index drug were included. Patients initiated pegloticase, rituximab, pegaspargase, or PLD based on diagnosis-specific criteria. Pegloticase and rituximab groups required relevant co-therapy (immunomodulator or methotrexate).

Age groups

- 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)

Estimated number of subjects

817

Study design details

Setting

Comparators

The study includes the following comparator groups:
• Rituximab as a negative control (non PEG therapy).
• Pegaspargase and PLD (pegylated liposomal doxorubicin) as PEG-containing comparator therapies.

Outcomes

Primary Outcomes

Among patients receiving pegloticase with immunomodulator co-therapy (primary analysis) and pegloticase monotherapy (sensitivity analysis), the following outcomes will be assessed: Anaphylaxis or anaphylactoid reactions, Acute cardiovascular events (CVEs),including acute myocardial infarction (AMI) and stroke Hospitalization for heart failure (HF),All-cause mortality.

Secondary Outcomes

The same outcomes will be evaluated among patients receiving rituximab (negative control cohort) and pegaspargase or pegylated liposomal doxorubicin (PLD) (PEG-containing comparator cohorts).

Data analysis plan

Data Analysis Plan

Descriptive statistics will summarize baseline characteristics during the 365-day pre-index period and pegloticase infusion frequency during follow-up. Patient characteristics, healthcare utilization, infusion frequency, and immunomodulator type will be assessed across pre-, intra-, and post-COVID-19 vaccination periods. Variables demonstrating temporal variation will be included as covariates in adjusted analyses.

Calendar Year-/Era-Based Outcome Estimation:

For each outcome, calendar year-/era-specific event counts and incidence rates will be estimated based on events and person-time accrued within each period. Participants may contribute person-time to multiple years or eras.

Regression Models for Incidence Rates and IRRs:

Poisson regression models, using log person-time as an offset, will estimate incidence rates, 95% confidence intervals (CIs), and incidence rate ratios (IRRs) across calendar years/eras, adjusting for age, sex, and relevant baseline characteristics. Robust standard errors or negative binomial models will be used if overdispersion is detected.

Comparator Cohorts:
Parallel incidence estimation and regression analyses will be conducted for the rituximab, pegaspargase, and PLD cohorts to evaluate within-drug temporal trends. Comparator analyses are not intended for direct comparisons between drugs.

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Data sources

Data sources (types)

Administrative healthcare records (e.g., claims)

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