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Effectiveness and safety of burosumab in an Early Access Program: a study of UK adults with X-linked hypophosphataemia

Submission date
31/07/2023

Recruitment status
No longer recruiting

Registration date
01/08/2023

Overall study status
Completed

Last Edited
06/11/2023

Condition category
Genetic Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
X-linked hypophosphataemia (XLH) is a rare, severe, lifelong disease where phosphate is lost from the blood via the kidneys in the urine, and is at lower levels than the body requires for healthy bone and muscle development. Patients can have slowed growth, short stature, limb deformities, pain and other health problems despite conventional treatment with phosphate and vitamin D. Consequently, their quality of life can be very bad. However, a recently available treatment (burosumab) can help; this medicine was made available to patients in an Early Access Program in the UK. Because it was the first time that adult patients had been given burosumab outside a clinical trial, this is a good opportunity to see how well the medicine works and learn about symptoms, medications and side effects that patients may experience.

Who can participate?
Patients aged 18 years or over who received burosumab through the Kyowa Kirin Early Access Programme for the treatment of XLH

What does the study involve?
Participants' medical records will be reviewed and relevant information collected by their normal care team. This includes basic patient details, medical history and medications, as well as information about their XLH symptoms and blood test results during the time they were taking burosumab. No change is made to patients' care as part of this study, the period being studied is in the past. Participants will be informed about the study beforehand and given the opportunity to opt out, but all participants from the burosumab Early Access Programme can take part in this study.

What are the possible benefits and risks of participating?
There are no benefits or additional risks for participants in this study compared to their usual care, their care teams are collecting the study data.

Where is the study run from?
Bionical Emas Ltd (UK)

When is the study starting and how long is it expected to run for?
April 2021to September 2023

Who is funding the study?
Kyowa Kirin Ltd (UK)

Who is the main contact?
Gillian Logan, gillian.logan@kyowakirin.com

Contact information

Type(s)
Public

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Integrated Research Application System (IRAS)
321609

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
2021-66-UK-CRY , IRAS 321609, CPMS 54855

Study information

Scientific Title
Early Access experience with burosumab in adults with X-linked hypophosphataemia in the UK: real-world clinical and patient-reported outcomes

Study objectives
This is a retrospective observational study of patients enrolled in an Early Access Program. This cohort is the first group of adult UK patients to receive burosumab outside a clinical trial. As such it is an opportunity to gain insight into the effectiveness and safety of the medicine in patients under normal clinical care.

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 09/05/2023, East Midlands - Leicester South Research Ethics Committee (Equinox House City Link, Nottingham, NG2 4LA, United Kingdom; +44 (0)207 104 8193; leicestersouth.rec@hra.nhs.uk), ref: 23/EM/0078

Study design
Multicentre single-arm retrospective longitudinal observational study

Primary study design
Observational

Study type(s)

Quality of life, Treatment, Safety

Health condition(s) or problem(s) studied
X-linked hypophosphataemia (XLH)

Interventions
UK centres with patients enrolled in the burosumab Early Access Program are sites in this observational study. Investigators collect data from patients' medical records, including patient-reported outcomes, that were recorded during participants' normal clinical care.
No additional tests or instruments were used for the purposes of this study. Key parameters that will be abstracted, if available, from medical records include:
1. Patient characteristics, demographics and relevant medical history
2. Medications, including analgesics, and treatment history
3. Serum phosphate, alkaline phosphatase, parathyroid hormone, calcium and vitamin D
4. Patient-reported outcomes including Brief Pain Inventory Short Form (BPI), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and EQ-5D-5L
5. Burosumab exposure and adverse events

Intervention Type
Other

Primary outcome(s)
The proportion of adults receiving burosumab for XLH achieving serum phosphate level above the lower limit of normal (according to local reference ranges) in a real-world clinical setting after 6 months’ treatment, assessed locally and recorded in medical record

Key secondary outcome(s))
1. Population and clinical characteristics at baseline, including patient-reported outcomes (PROs), recorded in and abstracted from medical records
2. The proportion of adults receiving burosumab for XLH who achieved a serum phosphate level above the lower limit of normal (according to local reference ranges) in a real-world clinical setting at any time, assessed (including vs local reference ranges), recorded in and abstracted from medical records
3. Patient-reported outcomes (where available) change from baseline (start of treatment with burosumab) to 6 months of treatment and 6-monthly thereafter:
3.1. Pain intensity measured by BPI Short Form Q3 (Worst Pain) score
3.2. WOMAC stiffness, pain, difficulty performing daily activities, total scores in most bothersome joint
3.3. EuroQOL-5-dimension 5 level (EQ-5D-5L)
4. Baseline distribution and changes in the following biochemical measures versus baseline over time:
4.1. Serum phosphate, creatinine, alkaline phosphatase (ALP), parathyroid hormone (PTH), calcium, 1,25 dihydroxyvitamin D: routine blood tests carried out during patients’ usual clinical care, abstracted from medical records as/when available
4.2. Urine calcium and ratio of tubular maximum reabsorption of phosphate to glomerular filtration rate (TmP/GFR): routine urinalysis carried out during patients’ usual clinical care, abstracted from medical records as/when available
5. The number and percentage of participants taking opioid, or any pain medication will be summarised at baseline and at 6-monthly intervals. Changes to opioid dose over time will be described. Data from medications/dosing information abstracted from participants’ medical records.

6. Impact on ability to work/study will be summarised at baseline and at 6-monthly intervals. Data abstracted from participants' medical records by direct care team, as and when routine care visits happened.
7. Burosumab dosing at baseline, changes over time and total burosumab treatment duration, abstracted from participants' medical records
8. Real-world time to treatment discontinuation (rwTTTD) and description of the reasons, abstracted from participants' medical records, with further information on reasons taken from adverse event reports collected during the Early Access Program.

Completion date
31/10/2023

Eligibility

Key inclusion criteria
All participants enrolled in the burosumab early access programme (EAP) will be considered for inclusion

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Total final enrolment
142

Key exclusion criteria
Participants opting out will not have their clinical data collected

Date of first enrolment
18/07/2023

Date of final enrolment
31/10/2023

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Royal National Orthopaedic Hospital
Brockley Hill
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HA7 4LP

Study participating centre
University Hospitals Bristol and Weston NHS Foundation Trust
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Sponsor information

Organisation
Kyowa Kirin International (United Kingdom)

ROR
https://ror.org/017hh7b56

Funder(s)

Funder type
Industry

Funder Name
Kyowa Kirin Farmacéutica

Alternative Name(s)
Kyowa Kirin Farmaceutica SLU, Kyowa Kirin Farmaceutica SL, Kyowa Kirin Farmacéutica S.L.U., ProStrakan, Kyowa Kirin Farmacéutica, S.L.U.

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
Spain

Results and Publications

Individual participant data (IPD) sharing plan
The data-sharing plans for the current study are unknown and will be made available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Other files	Patient optout letter version 1.2 Participant information sheet		01/08/2023	No	No

Participant information sheet	11/11/2025	11/11/2025	No	Yes