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Public summary of opinion on orphan designation

Burosumab for the treatment of phosphaturic mesenchymal tumour

On 16 April 2018, orphan designation (EU/3/18/2011) was granted by the European Commission to Ultragenyx Germany GmbH, Germany, for burosumab for the treatment of phosphaturic mesenchymal tumour.

What is phosphaturic mesenchymal tumour?

Phosphaturic mesenchymal tumour is an abnormal growth that causes weak and soft bones, especially of the head, arms and legs. The tumour produces hormones, particularly a substance called fibroblast growth factor 23 (FGF23), which cause the body to lose phosphate, an essential component of bones.

The condition is debilitating in the long term because low phosphate levels lead to weakness and pain in bones and muscles, tiredness, difficulty in walking and fractures. In rare cases the tumour can spread to other parts of the body and be life threatening.

What is the estimated number of patients affected by the condition?

At the time of designation, phosphaturic mesenchymal tumour affected less than 0.01 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 500 people*, and is below the ceiling for orphan designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and the knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

At the time of designation, phosphaturic mesenchymal tumour could usually be satisfactorily cured by surgery if the tumour could be completely removed and had not spread. Cancer medicines for soft tissue sarcoma were used if appropriate, and treatment with phosphate and vitamin D supplements was used to manage phosphate levels and bone weakness (osteomalacia).

The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with phosphaturic mesenchymal tumour because early results show it produces improvements in patients who have bone weakness that cannot be cured by surgery and whose

*Disclaimer: For the purpose of the designation, the number of patients affected by the condition is estimated and assessed on the basis of data from the European Union (EU 28), Norway, Iceland and Liechtenstein. This represents a population of 517,400,000 (Eurostat 2018).

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symptoms are not well controlled with existing treatments. This assumption will need to be confirmed at the time of marketing authorisation, in order to maintain the orphan status.

How is this medicine expected to work?

Under normal circumstances, the kidneys reabsorb phosphate into the bloodstream to prevent it being lost in urine. In patients with phosphaturic mesenchymal tumour, excess FGF23 causes the kidneys to stop reabsorbing phosphate into the bloodstream, and so results in low phosphate levels and associated symptoms. Burosumab is a monoclonal antibody (a type of protein) designed to recognise and attach to FGF23. By attaching to FGF23, the medicine blocks its activity, allowing the kidneys to reabsorb phosphate and restore normal levels of phosphate in the blood. This is expected to improve bone strength and reduce symptoms of the condition.

What is the stage of development of this medicine?

The effects of burosumab have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with burosumab in patients with phosphaturic mesenchymal tumour were ongoing.

At the time of submission, the medicine was authorised in the EU as Crysvita for the treatment of X-linked hypophosphataemia.

At the time of submission, burosumab was not authorised anywhere in the EU for phosphaturic mesenchymal tumour. Orphan designation of the medicine had been granted in the United States for treatment of tumour-induced osteomalacia and in the EU and the United States for X-linked hypophosphataemia.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 15 March 2018 recommending the granting of this designation.

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Opinions on orphan medicinal product designations are based on the following three criteria:

- the seriousness of the condition;
- the existence of alternative methods of diagnosis, prevention or treatment;
- either the rarity of the condition (affecting not more than 5 in 10,000 people in the EU) or insufficient returns on investment.

Designated orphan medicinal products are products that are still under investigation and are considered for orphan designation on the basis of potential activity. An orphan designation is not a marketing authorisation. As a consequence, demonstration of quality, safety and efficacy is necessary before a product can be granted a marketing authorisation.

For more information

Sponsor's contact details:

Contact details of the current sponsor for this orphan designation can be found on EMA website, on the medicine's rare disease designations page.

For contact details of patients' organisations whose activities are targeted at rare diseases see:

- Orphanet, a database containing information on rare diseases, which includes a directory of patients' organisations registered in Europe;
- European Organisation for Rare Diseases (EURORDIS), a non-governmental alliance of patient organisations and individuals active in the field of rare diseases.

Translations of the active ingredient and indication in all official EU languages[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Burosumab	Treatment of phosphaturic mesenchymal tumour
Bulgarian	Бурозумаб	Лечение на фосфатуричен мезенхимален тумор
Croatian	Burosumab	Liječenje fosfaturičnog mezenhimalnog tumora
Czech	Burosumab	Léčba fosfaturického mezenchymálního tumoru
Danish	Burosumab	Behandling af mesenkymal tumor med fosfaturi
Dutch	Burosumab	Behandeling van fosfaturische mesenchymale tumor
Estonian	Burosumab	Fosfatuurse mesenhümaalse kasvaja ravi
Finnish	Burosumabi	Fosfatuuristen mesenkymaalisten kasvainten hoito
French	Burosumab	Traitement des tumeurs mésenchymateuses phosphaturiques
German	Burosumab	Behandlung phosphaturischer mesenchymaler Tumore
Greek	Μπουροσουμάμπη	Θεραπεία φωσφατουρικού μεσεγχυματικού όγκου
Hungarian	Burosumab	Foszfáturiás mezenchimális tumor kezelése
Italian	Burosumab	Trattamento del tumore mesenchimale fosfaturico
Latvian	Burosumabs	Ar fosfatūriju saistītā mezenhimālā audzēja ārstēšana
Lithuanian	Burosumabas	Fosfaturinio mezenchiminio naviko gydymas
Maltese	Burosumab	Trattament ta' tumur mesenċimali fosfaturiku
Polish	Burosumab	Leczenie fosfaturycznego guza mezenchymalnego
Portuguese	Burosumab	Tratamento do tumor mesenquimal fosfatúrico
Romanian	Burosumab	Tratamentul tumorilor mezenchimale fosfaturice
Slovak	Burosumab	Liečba fosfaturického mezenchymálneho nádoru
Slovenian	Buroszumab	Zdravljenje fosfaturičnega mezenhimskega tumorja
Spanish	Burosumab	Tratamiento del tumor mesenquimal fosfatúrico
Swedish	Burosumab	Behandling av fosfaturisk mesenkymaltumör
Norwegian	Burosumab	Behandling av fosfaturisk mesenkymal tumor
Icelandic	Búrósúmab	Meðferð við fósfatmigu bandvefsæxl

[1] At the time of designation