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EMA/COMP/452146/2014
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Recombinant human diamine oxidase for the treatment of mastocytosis

On 22 August 2014, orphan designation (EU/3/14/1320) was granted by the European Commission to Medical University of Vienna, Austria, for recombinant human diamine oxidase for the treatment of mastocytosis.

What is mastocytosis?

Mastocytosis is a group of disorders in which there are too many mast cells, a type of white blood cell, in various organs in the body. These cells release large amounts of histamine and other chemicals into the blood, causing symptoms such as a skin rash, itchy skin and hot flushes.

In children, the disorder usually only affects the skin ('cutaneous mastocytosis') and causes a red and itchy rash. This form of mastocytosis may disappear on its own. In some patients, mainly adults, the disorder progresses into 'systemic mastocytosis', in which the mast cells become aggressive tumours that infiltrate organs, such as the intestine, the liver, the spleen and the bone marrow. This causes various symptoms such as palpitations and fainting, bone pain, tiredness, weight loss, diarrhoea, nausea (feeling sick), vomiting and stomach ache.

Mastocytosis is a condition that is debilitating in the long term and may be life threatening in those patients who develop the systemic form of the disorder.

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

At the time of designation, mastocytosis affected less than 3 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 153,000 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).

*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 511,100,000 (Eurostat 2014).

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What treatments are available?

At the time of designation, only treatments aimed at relieving the symptoms of mastocytosis were available. They included antihistamines to block the action of histamine produced by the mast cells.

The sponsor has provided sufficient information to show that recombinant human diamine oxidase might be of significant benefit for patients with mastocytosis because it works in a different way to existing treatments, breaking down histamine instead of blocking its action as current treatments do. Studies in experimental models showed that the medicine may significantly reduce histamine levels in patients with the disease thereby reducing the symptoms of the disease. These assumptions 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?

Recombinant human diamine oxidase is an enzyme that breaks down histamine. Since histamine plays a major role in mastocytosis, its break down is expected to provide relief from the symptoms of the condition.

The protein in this medicine is made by a method known as 'recombinant DNA technology': it is made by cells into which a gene (DNA) has been introduced that makes them able to produce the protein.

What is the stage of development of this medicine?

The effects of recombinant human diamine oxidase have been evaluated in experimental models.

At the time of submission of the application for orphan designation, no clinical trials with recombinant human diamine oxidase in patients with mastocytosis had been started.

At the time of submission, this medicine was not authorised anywhere in the EU for mastocytosis or designated as an orphan medicinal product elsewhere for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 10 July 2014 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:

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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	Recombinant human diamine oxidase	Treatment of mastocytosis
Bulgarian	Човешка рекомбинантна диамин оксидаза	Лечение на мастоцитоза
Croatian	Rekombinantna ljudska diaminooksidaza	Liječenje mastocitoze
Czech	Člověk rekombinantní diamine oxidázu	Léčba mastocytózy
Danish	Rekombinant human diamin oxidase	Behandling af mastocytose
Dutch	Humaan recombinant diamine oxidase	Behandeling van mastocytose
Estonian	Rekombinantne inimese diamiinoksüdaas	Mastotsütoosi ravi
Finnish	Ihmisen rekombinantti diamiini oksidaasi	Mastosytoosin hoito
French	Diamine oxydase humaine recombinante	Traitement de la mastocytose
German	Humane rekombinante Diaminoxidase	Behandlung der Mastozytose
Greek	Ανθρώπινη ανασυνδυασμένη οξειδάση διαμίνης	Θεραπεία της μαστοκυττάρωσης
Hungarian	Humán rekombináns diamin oxidáz	Mastocytosis kezelése
Italian	Diammina ossidasi umana ricombinante	Trattamento della mastocitosi
Latvian	Rekombinanta cilvēka diamīna oksidāze	Mastocitozes ārstēšana
Lithuanian	Rekombinantinė žmogaus diamino oksidazė	Mastocitozės gydymas
Maltese	Diamine oxidase uman rikombinanti	Kura tal-mastoċitosi
Polish	Ludzka rekombinowana oksydaza diaminowa	Leczenie mastocytozy
Portuguese	Diamina oxidase recombinante humana	Tratamento da mastocitose
Romanian	Diamino-oxidaza recombinantă umană	Tratamentul mastocitozei
Slovak	Rekombinantná ľudská diamín oxidáza	Liečba mastocytózy
Slovenian	Rekombinantna človeška diamin oksidaza	Zdravljenje dermatofibrosarkoma protuberans
Spanish	Diamina oxidasa humano recombinante	Tratamiento de la mastocitosis
Swedish	Humant rekombinant diaminoxidas	Bahandling av mastocytos
Norwegian	Rekombinant human diaminoksidase	Behandling av mastocytose
Icelandic	Manna raðbrigða díamín oxídasa	Meðferð mastócýtosis

[1] At the time of designation