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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

isofagomine tartrate for the treatment of Gaucher disease

On 23 October 2007, orphan designation (EU/3/07/493) was granted by the European Commission to Amicus Therapeutics, United Kingdom, for isofagomine tartrate for the treatment of Gaucher disease.

The sponsorship was transferred to Shire Pharmaceutical Development Limited, United Kingdom, in August 2008 and subsequently to Amicus Therapeutics UK Ltd, United Kingdom, in February 2010.

What is Gaucher Disease?

Gaucher disease is characterized by the accumulation of specific chemical substances (glucocerebrosides) in several cells (macrophages and monocytes) that are localized throughout the body, but particularly in the spleen, liver and bone marrow. The disorder results from decreased activity of an enzyme (a protein that stimulates a chemical reaction in the body), called glucocerebrosidase; this enzyme breaks down the glucocerebrosides. Since glucocerebrosides are not destroyed, they progressively accumulate in the cells. The disorder is genetic, and usually both parents are healthy carriers of a single copy of the damaged gene; to develop the disease, two damaged copies must be present in the same individual (this is called autosomal recessive inheritance). The severity of Gaucher disease is extremely variable; some patients present in childhood with virtually all the complications of Gaucher disease, while others remain asymptomatic for more than 70 years.

Gaucher disease has traditionally been divided into the following 3 clinical subtypes, according to the absence or presence of neurologic involvement and its progression:

- Type 1 - Nonneuronopathic form (the most common and less severe form);
- Type 2 - Acute neuronopathic form (the most severe form, usually diagnosed shortly after birth);
- Type 3 - Chronic neuronopathic form (a form of intermediate severity between Type 1 and Type 2).

However, some cases do not fit precisely into one of these categories. Gaucher disease can be life-threatening (Type 2 and 3) or chronically debilitating (Type 1).

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

At the time of designation, Gaucher disease affected approximately 0.3 in 10,000 people in the European Union (EU)[*]. This is equivalent to a total of around 15,000 people, and is below the threshold 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 the application for orphan designation, two medicinal products were authorized in the EU for the treatment of Gaucher syndrome, miglustat (Zavesca, given orally) and imiglucerase (Cerezyme, given intravenously). Given its different mechanism of action, isofagomine tartrate may be of potential significant benefit over the currently authorised medicinal products. This assumption will have to be confirmed at the time of marketing authorisation, and this will be necessary to maintain the orphan status.

How is this medicine expected to work?

Isofagomine tartrate works by moving the enzyme glucocerebrosidase from one part of the cell (where the defective enzyme is confined) to another part of the cell, where it can function properly. Thus, isofagomine tartrate is expected to act by increasing overall glucocerebrosidase activity, and as a consequence, by reducing the accumulation of glucocerebrosides.

What is the stage of development of this medicine?

The effects of the medicinal product were evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials in patients with Gaucher disease were ongoing.

The medicinal product was not authorised anywhere in the world for Gaucher disease. The medicinal product was designated as orphan medicinal product on 10 January 2006 from the United States Food and Drug Administration (FDA), for the treatment of Gaucher disease.

According to Regulation (EC) No 141/2000 of 16 December 1999, the Committee for Orphan Medicinal Products (COMP) adopted on 12 September 2007 a positive opinion recommending the grant of the above-mentioned 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 European Union) or insufficient returns on investment.

[*]For the purpose of the designation, the number of patients affected by the condition is estimated and assessed based on data from the European Union (EU 27), Norway, Iceland and Lichtenstein. This represents a population of 498,000,000 (Eurostat 2006). This estimate is based on available information and calculations presented by the sponsor at the time of the application.

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

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

Language	Active Ingredient	Indication
English	Isofagomine tartrate	Treatment of Gaucher disease
Bulgarian	Изофагомин тартрат	Лечение на болест на Гоше
Czech	Tartrát izofagominu	Léčba Gaucherovy choroby
Danish	Isofagomintartrat	Behandling af Gauchers sygdom
Dutch	Isofagominetartraat	Behandeling van de ziekte van Gaucher
Estonian	Isofagomiin tartaat	Gaucher' tõve ravi
Finnish	Isofagomiinitartraatti	Gaucherin taudin hoito
French	Tartrate d'isofagomine	Traitement de la maladie de Gaucher
German	Isofagomin tartrat	Behandlung der Gaucher-Krankheit
Greek	Τρυγική ισοφαγομίνη	Θεραπευτική αγωγή για την νόσο του Gaucher
Hungarian	Izofagomin-tartarát	Gaucher-kór kezelése
Italian	Isofagomina tartrato	Trattamento della malattia di Gaucher
Latvian	Isofagomine tartrāts	Gošē slimības ārstēšana
Lithuanian	Izofagomino tartratas	Gošė ligos gydymas
Maltese	Isofagomine tartrate	Kura tal-marda ta' Gaucher
Polish	Winian izofagominowy	Leczenie choroby Gaucher'a
Portuguese	Tartrato de isofagomina	Tratamento da doença de Gaucher
Romanian	Tartrat de izofagomină	Tratamentul bolii Gaucher
Slovak	Izofagomíniumtartarát	Liečba Gaucherovej choroby
Slovenian	Isofagomin tartrat	Zdravljenje Gaucherjeve bolezni
Spanish	Tartrato de isofagomina	Tratamiento de la enfermedad de Gaucher
Swedish	Isofagomintartrat	Behandling av Gauchers sjukdom
Norwegian	Isofagomintartrat	Behandling av Gauchers sykdom
Icelandic	Ísófagómín tartrat	Meðferð við Gauchers sjúkdómi

[1] At the time of designation