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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

1-deoxygalactonojirimycin hydrochloride for the treatment of Fabry disease

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Disclaimer Please note that revisions to the Public Summary of Opinion are purely administrative updates. Therefore, the scientific content of the document reflects the outcome of the Committee for Orphan Medicinal Products (COMP) at the time of designation and is not updated after first publication.	

On 22 May 2006, orphan designation (EU/3/06/368) was granted by the European Commission to Amicus Therapeutics UK Limited, United Kingdom, for 1-deoxygalactonojirimycin hydrochloride for the treatment of Fabry disease.

The sponsorship was transferred as follows:

- to Shire Pharmaceutical Development Limited, United Kingdom, in June 2008;
- to Amicus Therapeutics UK Ltd, United Kingdom, in February 2010;
- to Glaxo Group Limited, United Kingdom, in June 2011;
- and finally to Amicus Therapeutics UK Ltd, United Kingdom, in March 2014.

What is Fabry disease?

Fabry disease comprises a group of inherited lysosomal storage disorders. Lysosomes are small vesicles within cells containing enzymes that are able to destroy or transform different substances of the cell, such as proteins, fat, nucleic acids (components of the genetic material) and sugars. Any change of the lysosomal enzymes causes abnormal accumulation of the substance (also known as substrate) normally transformed by it. Cells are unable to destroy or eliminate accumulated substrates, and high levels of them can be toxic leading to damage and malfunction of the organ where accumulation occurs. In Fabry disease, the activity of the lysosomal enzyme α-galactosidase A is impaired or absent. Fabry disease is a heterogenous disorder with variable onset of symptoms that affect several organs. Glycosphingolipids (biological molecules composed of a type of sugar and lipid) is

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the substrate that accumulates in Fabry disease, and severity of the disease depends on the level of accumulation. Fabry disease affects the nervous system, kidneys, heart, skin and gastrointestinal system. Some of the most common pathological symptoms are skin lesions and burning pain of the extremities. This pain can become very intense, especially when one has a fever. Fabry disease is chronically debilitating and life threatening.

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

At the time of designation, Fabry disease affected approximately 1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 47,000 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).

What treatments are available?

Several products were authorised for the condition in the Community at the time of submission of the application for orphan drug designation. In particular, enzymes replacing the missing enzyme were used to treat Fabry disease.

1-deoxygalactonojirimycin hydrochloride might be of potential significant benefit for the treatment of Fabry disease, as it may act in a different way which is hoped to improve the long-term outcome of the patients. This assumption will have to be confirmed at the time of marketing authorisation. This will be necessary to maintain the orphan status.

How is this medicine expected to work?

1-deoxygalactonojirimycin hydrochloride is expected to bind to the abnormal α-galactosidase A enzyme and to correct its transport into the lysosome where its action is needed. This way, it is expected that the α-galactosidase A activity is restored. The abnormally high levels of glycosphingolipids are decreased and the extent of Fabry disease and its clinical consequences are limited.

What is the stage of development of this medicine?

The effects of 1-deoxygalactonojirimycin hydrochloride were evaluated in experimental models.

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

1-deoxygalactonojirimycin hydrochloride was not authorised anywhere worldwide for Fabry disease, at the time of submission. Orphan designation of 1-deoxygalactonojirimycin hydrochloride was granted in the United States for treatment of Fabry disease.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 5 April 2006 recommending the granting of this designation.

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[*]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 25), Norway, Iceland and Liechtenstein.
At the time of designation, this represented a population of 468,900,000 (Eurostat 2006).

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.

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	1-deoxygalactonojirimycin hydrochloride	Treatment of Fabry disease
Bulgarian	1-деоксигалактоножиримицин хидрохлорид	Лечение на болест на Фабри
Croatian	1-deoksigalaktonojirimicinklorid	Liječenje Fabryjeve bolesti
Czech	1-deoxygalactonojirimycin hydrochlorid	Léčba Fabryho choroby
Danish	1-deoxygalactonojirimycin hydrochlorid	Behandling af Fabrys sygdom
Dutch	1-deoxygalactonojirimycin hydrochloride	Behandeling van de ziekte van Fabry
Estonian	1-deoxygalactonojirimycin hüdrokloriid	Fabry tõve ravi
Finnish	1-deoksigalaktonojirimysiinihydrokloridi	Fabryn taudin hoito
French	Chlorhydrate de 1-désoxygalactonojirimycine	Traitement de la maladie de Fabry
German	1-deoxygalactonojirimycin Hydrochlorid	Behandlung des Fabry-Syndroms
Greek	Υδροχλωρική 1-deoxygalactonojirimycin	Αγωγή κατά της νόσου του Fabry
Hungarian	1-deoxygalactonojirimycin hidroklorid	Fabry betegség kezelése
Italian	1-deossigalattonogirimicinacloridrato	Trattamento della malattia di Fabry
Latvian	1-deoksigalaktonojirimicīna hidrohlorīds	Fabrī slimības ārstēšana
Lithuanian	1-deoksigalaktonojirimicino hidrochloridas	Fabry ligos gydymas
Maltese	1-deoxygalactonojirimycin hydrochloride	Kura tal-marda ta' Fabry
Polish	1-dezoksygalactonojirimycyny chlorowodorek	Leczenie choroby Fabry'ego
Portuguese	Cloridrato de 1-deoxigalactonojirimicina	Tratamento da doença de Fabry
Romanian	Clorhidrat de 1-deoxigalactonojirimicin	Tratamentul bolii Fabry
Slovak	1-deoxygalaktonojirimycín hydrochlorid	Liečba Fabryho choroby
Slovenian	1-deoksigalaktonojirimicinhidroklorid	Zdravljenje Fabryjeve bolezni
Spanish	Clorhidrato de 1-deoxigalactonojirimicina	Tratamiento de la enfermedad de Fabry
Swedish	1-deoxygalactonojirimysin hydroklorid	Behandling av Fabrys sjukdom
Norwegian	1-deoksygalaktonojirimycinhydroklorid	Behandling av Fabrys sykdom
Icelandic	1-deoxýgalactónojirimýcín hýdróklóríð	Meðferð Fabry-sjúkdóms

[1] At the time of transfer of sponsorship