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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Triheptanoin for the treatment of long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency

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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 6 December 2012, orphan designation (EU/3/12/1082) was granted by the European Commission to B. Braun Melsungen AG, Germany, for triheptanoin for the treatment of long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency.

What is long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency?

Long-chain 3-hydroxyacyl-CoA dehydrogenase (LCHAD) deficiency is an inherited disease caused by the lack of an enzyme called LCHAD. LCHAD is one of the enzymes needed by the mitochondria (the energy-producing components within cells) to break down certain fatty acids in order to generate energy. If this enzyme is not present, cells cannot function normally causing a wide range of signs and symptoms including hypoglycaemia (low blood sugar levels), abnormalities in the retina (the light-sensitive tissue at the back of the eye) and damage to the liver, brain, nerves and heart.

The condition is chronically debilitating and life threatening particularly since it causes hypoglycaemia and damage to the nerves and various organs.

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

At the time of designation, LCHAD deficiency affected not more than 0.17 in 10,000 people in the European Union (EU)*. This is equivalent to a total of not more than 8,600 people, and is below the

*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 27), Norway, Iceland and Liechtenstein.
At the time of designation, this represented a population of 509,000,000 (Eurostat 2012).

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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 submission of the application for orphan designation, no satisfactory method had been authorised in the European Union for the treatment of LCHAD deficiency. Treatment of patients primarily involved restriction of dietary fat to less than 30% of the total calories and the substitution of long-chain fatty acids with medium-chain fatty acids. However, these dietary regimen were of unproven value or only partially successful.

How is this medicine expected to work?

Triheptanoin is a synthetic (artificially produced) fat which is broken down in the liver into substances that can be used to generate energy without the need for LCHAD. By bypassing the need for LCHAD, this medicine is expected to restore the normal energy generation and ultimately improve the overall outcome of the patients.

What is the stage of development of this medicine?

At the time of submission of the application for orphan designation, the evaluation of the effects of triheptanoin in experimental models was ongoing.

At the time of submission of the application for orphan designation, no clinical trials with triheptanoin in patients with LCHAD deficiency had been started.

At the time of submission, triheptanoin was not authorised anywhere in the EU for LCHAD deficiency. Orphan designation of triheptanoin had been granted in the United States of America for fatty acid oxidation disorders.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 7 November 2012 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 substance	Indication
English	Triheptanoin	Treatment of long-chain L-3-hydroxyacyl-CoA-dehydrogenase deficiency
Bulgarian	Трихептаноин	Лечение на Дефицит на L-3-хидроксиацил-CoA-дехидрогеназата с дълга верига
Czech	Triheptanoin	Léčba deficitu hydroxyacyl-CoA dehydrogenázy mastných kyselin s dlouhým řetězcem
Danish	Triheptanoin	Behandling af langkædet L-3-hydroxyacyl-CoA-dehydrogenase mangel
Dutch	Triheptanoin	Behandeling van Lange keten L-3-hydroxyacyl-CoA-dehydrogenase deficiëntie
Estonian	Triheptanoiin	Pika ahelaga L-3-hüdroksüatsüül-CoA-dehüdrogenaasi (LCHAD) defitsiidi ravi
Finnish	Triheptanoiini	Pitkäketjuisten rasvahappojen L-3-hydroksiasyyli-CoA-dehydrogenaasin puutoken hoito
French	Triheptanoïne	Traitement du déficit en L-3-hydroxyacyl-CoA déshydrogénase des acides gras à chaîne longue
German	Triheptanoin	Behandlung eines (LCHAD-Mangels) Long-Chain-3-Hydroxyacyl-CoA-Dehydrogenase-Mangel
Greek	Τριεπτανοΐνη	Θεραπεία της ανεπάρκεια L-3-υδροξυακυλ-CoA αφυδρογονάσης μακράς αλύσου
Hungarian	Triheptanoin	Hosszú-láncú L-3-hidroxi-acil-CoA dehidrogenáz hiány (LCHAD)kezelése
Italian	Trieptanoina	Trattamento del deficit di L-3-idrossiacil-CoA deidrogenasi a catena lunga
Latvian	Triheptanoīns	Garo ķēžu L-3-hidoksiacil-CoA-dehidrogenāzes deficīta ārstēšana
Lithuanian	Triheptanoinas	Ilgųjų grandinių L-3-hidroksiacil-KoA dehidrogenazės (angl. LCHAD) stokos gydymas
Maltese	Triheptanoin	Kura ta' nuqqas ta' L-3-hydroxyacyl-CoA-dehydrogenase b'katina twila
Polish	Triheptanoina	Leczenie niedoboru dehydrogenazy L-3-hydroksyacylo-koenzymu A długołańcuchowych kwasów tłuszczowych
Portuguese	Tri-heptanoína	Tratamento da deficiência da desidrogenase de 3-hidroxi-acil-CoA de cadeia longa
Romanian	Triheptanoin	Tratamentul deficienţei de L-3-hidroxiacil-CoA-dehidrogenază cu lanţ lung
Slovak	Triheptanoín	Liečba deficitu L-3-hydroxyacyl-CoA dehydrogenázy mastných kyselín s dlhým reťazcom

[1] At the time of designation

Language	Active substance	Indication
Slovenian	Triheptanoin	Zdravljenje pomanjkanja dolgoverižne L-3-hidroksiacil-CoA-dehidrogenaze
Spanish	Triheptanoína	Tratamiento de la deficiencia de L-3-hidroxiacil-CoA-deshidrogenasa de cadena larga
Swedish	Triheptanoin	Behandling av långkedjigt L-3-hydroxyacyl-CoA-dehydrogenasbrist
Norwegian	Triheptanoin	Behandling av langkjedet 3-hydroksyacyl-CoA-dehydrogenasedefekt
Icelandic	Tríheptanóín	Meðferð við skorti á langkeðju L-3-hýdroxýasýl-CoA-dehýdrógenasa