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EMA/COMP/432828/2015
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Triheptanoin for the treatment of mitochondrial trifunctional protein deficiency

On 28 July 2015, orphan designation (EU/3/15/1525) was granted by the European Commission to Ultragenyx UK Limited, United Kingdom, for triheptanoin for the treatment of mitochondrial trifunctional protein deficiency.

What is mitochondrial trifunctional protein deficiency?

Mitochondrial trifunctional protein deficiency is an inherited disease caused by the lack of a protein called TFP. TFP is needed by the mitochondria (the energy-producing components within cells) to break down certain fatty acids in order to generate energy. If TFP is lacking or its activity is reduced, cells cannot function normally causing a wide range of signs and symptoms including hypoglycaemia (low blood sugar levels) 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, mitochondrial trifunctional protein deficiency affected approximately 0.1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 5,000 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?

At the time of designation, no satisfactory methods were authorised in the EU for the treatment of mitochondrial trifunctional protein deficiency. Treatment of patients primarily involved restriction of

*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 512,900,000 (Eurostat 2015).

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dietary fat, as well as increased frequency of food intake to avoid overloading the body with fatty acids. However, these dietary regimens 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 TFP. By bypassing the need for TFP, this medicine is expected to restore normal energy generation and ultimately improve the overall outcome of the patients.

What is the stage of development of this medicine?

The effects of the medicine have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with triheptanoin in patients with mitochondrial trifunctional protein deficiency were ongoing.

At the time of submission, triheptanoin was not authorised anywhere in the EU for mitochondrial trifunctional protein deficiency. Orphan designation of the medicine had been granted in the United States for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 18 June 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:

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	Triheptanoin	Treatment of mitochondrial trifunctional protein deficiency
Bulgarian	Трихептаноин	Лечение на дефицит на митохондриален трифункционален протеин
Croatian	Triheptanoin	Liječenje nedostatka mitohondrijskog trofunkcijskog proteina
Czech	Triheptanoin	Léčba deficitu mitochondriálního trifunkčního protein
Danish	Triheptanoin	Behandling af mitokondrielt trifunktionelt protein mangel
Dutch	Triheptanoin	Behandeling van mitochondriale trifunctionele proteïne-deficiëntie
Estonian	Triheptanoiin	Mitokondriaalse kolmefunktsioonilise valgu defitsiidi ravi
Finnish	Triheptanoiini	Mitokondriaalisen trifunktionaalisen proteiini puutoksen hoito
French	Triheptanoïne	Traitement du déficit en protéine trifonctionnelle mitochondriale
German	Triheptanoin	Behandlung eines Mangels an mitochondrialem trifunktionalem Protein
Greek	Τριεπτανοΐνη	Θεραπεία της ανεπάρκειας τριδραστικής μιτοχονδριακής πρωτεΐνης
Hungarian	Triheptanoin	Mitokondriális trifunkcionális proteinhiány kezelése
Italian	Trieptanoina	Trattamento del deficit di proteina mitocondriale trifunzionale
Latvian	Triheptanoīns	Mitohondriju trīsfunkcionālā proteīna deficīta ārstēšana
Lithuanian	Triheptanoinas	Mitochondrijų trifunkcinio baltymo stokos gydymas
Maltese	Triheptanoin	Kura ta' nuqqas tal-proteina trifunzjonali mitokondrijali
Polish	Triheptanoina	Leczenie niedoboru mitochondrialnego białka trójfunkcyjnego
Portuguese	Tri-heptanoína	Tratamento da deficiência da proteína trifuncional mitocondrial
Romanian	Triheptanoin	Tratamentul deficitului proteinei trifuncționale mitocondriale
Slovak	Triheptanoín	Liečba deficitu mitochondriálneho trifunkčného proteínu
Slovenian	Triheptanoin	Zdravljenje pomanjkanja mitohondrijskega trifunkcijskega proteina
Spanish	Triheptanoína	Tratamiento de la deficiencia de proteína trifuncional mitocondrial
Swedish	Triheptanoin	Behandling av mitokondriell trifunktionell proteinbrist
Norwegian	Triheptanoin	Behandling av mitokondrielt trifunksjonelt protein mangel
Icelandic	Tríheptanóín	Meðferð við skorti á þrívirku próteini í hvatberum

[1] At the time of designation