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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Benserazide hydrochloride for the treatment of beta thalassaemia intermedia and major

On 16 December 2014, orphan designation (EU/3/14/1402) was granted by the European Commission to Isabelle Ramirez, Germany, for benserazide hydrochloride for the treatment of beta thalassaemia intermedia and major.

What is beta thalassaemia intermedia and major?

Beta thalassaemia is an inherited disease in which patients are unable to make enough beta-globin, one of the components of adult haemoglobin, which is the protein found in red blood cells that carries oxygen around the body in adults. Beta thalassaemia major is a severe form of the disease in which patients need frequent blood transfusions, while beta thalassaemia intermedia is a less severe form, which may worsen with age. Both beta thalassaemia intermedia and major are caused by defects in the gene responsible for the production of beta-globin, which result in low or no production of adult haemoglobin. In the more severe forms of the disease symptoms usually appear by two years of age, when the production of fetal haemoglobin (the main type of haemoglobin found in unborn children) is deactivated and the production of adult haemoglobin is activated.

Beta thalassaemia intermedia and major are long-lasting debilitating diseases. They may be life threatening because of severe anaemia (low red blood cell count due to lack of haemoglobin), the need for repeated blood transfusions and the risk of complications associated with them.

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

At the time of designation, beta thalassaemia intermedia and major affected approximately 1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 51,000 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, the main treatments for beta thalassaemia intermedia and major were blood transfusions and the use of iron chelators (medicines for reducing the high iron levels in the body caused by repeated blood transfusions). In some cases, bone-marrow transplantation was used to cure the disease. This is a complex procedure in which the bone marrow of the patient is destroyed and replaced with bone marrow from a matched donor, to allow the patient to produce red blood cells with normal levels of haemoglobin.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with the condition because early studies show that it promotes the production of fetal haemoglobin which is expected to replace the missing adult haemoglobin, reducing the need for blood transfusions. This assumption 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?

At birth, the gene that guides the production of fetal haemoglobin is 'switched off', and the production of adult haemoglobin is activated. However, patients with beta thalassaemia are unable to produce functional adult haemoglobin, because of their inability to produce beta-globin. Production of fetal haemoglobin is not compromised in these patients because fetal haemoglobin does not contain beta-globin sub-units, but gamma-globulin.

Benserazide hydrochloride is expected to act by keeping the gene for fetal haemoglobin 'switched on'. Fetal haemoglobin is expected to replace the missing haemoglobin in patients with beta thalassaemia, thereby reducing the need for blood transfusions.

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, no clinical trials with the medicine in patients with beta thalassaemia intermedia and major had been started.

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

At the time of submission, the medicine in combination with levodopa was authorised in several EU Member States for the treatment of Parkinson's disease.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 13 November 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

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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	Benserazide hydrochloride	Treatment of beta-thalassaemia intermedia and major
Bulgarian	Бензеразид хидрохлорид	Лечение на бета таласемия интермедия и майор
Croatian	Benzerazidklorid	Liječenje beta-talasemije intermedije i major
Czech	Benserazid hydrochlorid	Léčení beta thalasémie intermedia a major
Danish	Benserazide hydrochloride	Behandling af beta-thalassæmia intermedia og major
Dutch	Benserazide hydrochloride	Behandeling van bètathalassemie intermedia en major
Estonian	Benseraziidhüdrokloriid	Keskmise ja raske beetatalasseemia ravi
Finnish	Benseratsidihydrokloridi	Beetatalassemia intermedia- ja major-tyypin hoito
French	Chlorhydrate de bensérazide	Traitement de la bêta-thalassémie intermédiaire et majeure
German	Benserazidhydrochlorid	Behandlung der Beta-Thalassämie (Intermediäre und Major-Form)
Greek	Υδροχλωρική βενσεραζίδη	Θεραπεία της β-μεσογειακής αναιμίας, ενδιάμεσης και μείζονος
Hungarian	Benserazid hidroklorid	Béta-talasszémia intermedia és major kezelése
Italian	Benserazide cloridrato	Trattamento della beta-talassemia intermedia e major
Latvian	Benserazīda hidrohlorīds	Vidēji izteiktas un izteiktas bēta talasēmijas ārstēšana
Lithuanian	Benserazido hidrochloridas	Vidutinio sunkumo ir sunkios β-talasemijos gydymas
Maltese	Benserazide hydrochloride	Kura tal-beta talassemija intermedja u maġġuri
Polish	Benserazydu chlorowodorek	Leczenie talasemii beta- intermedia i major
Portuguese	Cloridrato de benserazida	Tratamento da beta talassémia intermédia e major
Romanian	Clorhidrat de benserazidă	Tratamentul beta talasemiei intermediare şi majore
Slovak	Benserazid hydrochlorid	Liečba stredne závažnej a závažnej beta talasémie
Slovenian	Benserazidijev hidroklorid	Zdravljenje srednje in velike talasemije beta
Spanish	Clorhidrato de benserazida	Tratamiento de la beta talasemia intermedia y mayor
Swedish	Benserazidehydroklorid	Behandling av beta-thalassaemia intermedia och major
Norwegian	Benserazidhydroklorid	Behandling av beta-thalassemia intermedia og beta-thalassemia major
Icelandic	Benserazíð hýdróklóríð	Meðferð á meðalbráðu Beta-Miðjarðarhafsblóðleysi og bráðu Beta-Miðjarðarhafsblóðleysi

[1] At the time of designation