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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Ibudilast for the treatment of amyotrophic lateral sclerosis

On 12 December 2016, orphan designation (EU/3/16/1801) was granted by the European Commission to MediciNova (Europe) Limited, United Kingdom, for ibudilast for the treatment of amyotrophic lateral sclerosis.

What is amyotrophic lateral sclerosis?

Amyotrophic lateral sclerosis (ALS) is a progressive disease of the nervous system, where nerve cells in the brain and spinal cord that control voluntary movement gradually deteriorate, causing loss of muscle function and paralysis. The exact causes are unknown but are believed to include genetic and environmental factors. The symptoms of ALS depend on which muscles weaken first, and include loss of balance, loss of control of hand and arm movement, and difficulty speaking, swallowing and breathing. ALS usually starts in mid-life and men are more likely to develop the disease than women.

ALS is a debilitating and life-threatening disease because of the gradual loss of function and its paralysing effect on muscles used for breathing, which usually leads to death from respiratory failure.

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

At the time of designation, ALS 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).

What treatments are available?

At the time of designation, riluzole was authorised in the EU to treat ALS. Patients also received supportive treatment, such as physiotherapy and breathing support, to relieve the symptoms of the disease.

*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 513,700,000 (Eurostat 2016).

The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with ALS, with early studies showing breathing and muscle function did not worsen so quickly when ibudilast is given in combination with riluzole. 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?

The exact way ibudilast works in ALS is unclear but it is known to block the action of enzymes called phosphodiesterases (PDEs) and of a substance called macrophage migration inhibiting factor (MIF), which are involved in regulating certain functions of brain cells. By blocking MIF and PDEs, the medicine is expected to suppress the production of inflammatory molecules and to increase the production of 'protective' molecules. In addition, ibudilast reduces activity of glial cells (a type of brain cell thought to be involved in the development of ALS). Together, these actions are expected to improve the symptoms of ALS.

What is the stage of development of this medicine?

The effects of ibudilast have been evaluated in experimental models.

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

At the time of submission, ibudilast was not authorised anywhere in the EU for ALS. Orphan designation of the medicine had been granted in the United States for ALS.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 4 November 2016 recommending the granting of this designation.

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 languages¹, Norwegian and Icelandic

Language	Active ingredient	Indication
English	Ibudilast	Treatment of amyotrophic lateral sclerosis
Bulgarian	Ибудиласт	Лечение на амиотрофична латерална склероза
Croatian	Ibudilast	Liječenje amiotrofične lateralne skleroze
Czech	Ibudilast	Léčba amyotrofické laterální sklerózy (ALS)
Danish	Ibudilast	Behandling af amyotrofisk lateralsklerose
Dutch	Ibudilast	Behandeling van amyotrofe lateraalsclerose
Estonian	Ibutilast	Amüotroofilise lateraalskleroosi ravi
Finnish	Ibudilasti	Amyotrofisen lateraaliskleroosin hoito
French	Ibudilast	Traitement de la sclérose latérale amyotrophique
German	Ibudilast	Behandlung der amyotrophen Lateralsklerose
Greek	Ιβουδιλάστη	Θεραπεία πλάγιας μυοατροφικής σκλήρυνσης
Hungarian	Ibudilaszt	Amyotrophiás lateral sclerosis kezelése
Italian	Ibudilast	Trattamento della sclerosi laterale amiotrofica
Latvian	Ibudilasts	Amyotrofiskās laterālās sklerozes ārstēšana
Lithuanian	Ibudilastas	Šoninės amiotrofinės sklerozės gydymas
Maltese	Ibudilast	Kura tas-sklersi laterali amjotrofika
Polish	Ibudilast	Leczenie stwardnienia bocznego zanikowego
Portuguese	Ibudilast	Tratamento da esclerose lateral amiotrófica
Romanian	Ibudilast	Tratamentul sclerozei laterale amiotrofice
Slovak	Íbudílášť	Liečba amyotrofickéj laterálnej sklerózy
Slovenian	Ibudilast	Zdravljenje amiotrofične lateralne skleroze
Spanish	Ibudilast	Tratamiento de la esclerosis lateral amiotrófica
Swedish	Ibudilast	Behandling av amyotrofisk lateralskleros
Norwegian	Ibudilast	Behandling av amyotrofisk lateralsklerose
Icelandic	Ibúdilast	Meðferð við blandaðri hreyfitaugahrörnun

¹ At the time of designation