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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

S[+] apomorphine for the treatment of amyotrophic lateral sclerosis

On 9 February 2012, orphan designation (EU/3/12/954) was granted by the European Commission to University of Sheffield (SITraN), United Kingdom, 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. This causes loss of muscle function and paralysis. The exact causes are unknown but are believed to include genetic and environmental factors. The symptoms of ALS vary depending on which muscles weaken first, and include loss of balance, loss of control of hand and arm movement, 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 long-term 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 due to respiratory failure.

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

At the time of designation, ALS affected less than 1 in 10,000 people in the European Union (EU)[*]. This is equivalent to fewer than 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, medicines authorised in the EU to treat ALS included riluzole. Patients also received supportive treatment to temporarily relieve the symptoms of the disease, such as physiotherapy and speech therapy, and devices to assist breathing.

[*]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. This represents a population of 506,300,000 (Eurostat 2011).

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The sponsor has provided sufficient information to show that S[+] apomorphine might be of significant benefit for patients with ALS because it works in a different way to the existing treatments and early studies in experimental models show that it may improve the outcome of patients with this condition. 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 cause of the damage to nerves cells in ALS is unclear but there is evidence that toxic molecules containing oxygen called 'reactive oxygen species' (ROS) could be involved.

The medicine is expected to work by increasing the levels of a protein called Nrf2, which 'switches on' the production of certain enzymes that can neutralize the toxic effects of ROS molecules in the nervous system.

The is expected to be able to reach the brain and spinal cord by crossing the 'blood-brain barrier' that separates the nervous system from the bloodstream.

What is the stage of development of this medicine?

The effects of S[+] apomorphine have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with S[+] apomorphine in patients with ALS had not started.

At the time of submission, S[+] apomorphine was not authorised anywhere in the EU for ALS or designated as an orphan medicinal product elsewhere for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 7 December 2011 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 ingredient	Indication
English	S[+] apomorphine	Treatment of amyotrophic lateral sclerosis
Bulgarian	S[+] апоморфин	Лечение на амиотрофична латерална склероза
Czech	S[+] apomorfin	Léčba amyotrofické laterální sklerózy
Danish	S[+] apomorphin	Behandling af amyotrofisk lateralsklerose
Dutch	S[+] apomorfine	Behandeling van amyotrofe lateraalsclerose
Estonian	S[+] apomorfiin	Amüotroofilise lateraalskleroosi ravi
Finnish	S[+] apomorfiini	Amyotrofisen lateraaliskleroosin hoito
French	S[+] apomorphine	Traitement de la sclérose latérale amyotrophique
German	S[+] apomorphin	Behandlung der amyotrophen Lateralsklerose
Greek	S[+] απομορφίνη	Θεραπεία πλάγιας μυοατροφικής σκλήρυνσης
Hungarian	S[+] apomorfin	Amyotrophiás lateral sclerosis kezelése
Italian	S[+] apomorfina	Trattamento della sclerosi laterale amiotrofica
Latvian	S[+] apomorfīns	Amiotrofiskās laterālās sklerozes ārstēšana
Lithuanian	S[+] apomorfinas	Šoninės amiotrofinės sklerozės gydymas
Maltese	S[+] apomorphine	Kura tas-sklerosi laterali amjotrofika
Polish	S[+] apomorfina	Leczenie stwardnienia bocznego zanikowego
Portuguese	S[+] apomorfina	Tratamento da esclerose lateral amiotrófica
Romanian	S[+] apomorfină	Tratamentul sclerozei laterale amiotrofice
Slovak	S[+] apomorfín	Liečba amyotrofickej laterálnej sklerózy
Slovenian	[S]+ apomorfin	Zdravljenje amiotrofične lateralne skleroze
Spanish	[S]+ apomorfina	Tratamiento de la esclerosis lateral amiotrófica
Swedish	[S]+ apomorfin	Behandling av amyotrofisk lateralskleros
Norwegian	[S]+ apomorfin	Behandling av amyotrofisk lateralsklerose
Icelandic	[S]+ apómorfín	Meðferð við blandaðri hreyfitaugahrörnun

[1] At the time of designation