13 March 2015
EMA/COMP/381629/2012 Rev.1
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Eculizumab for the treatment of infection-associated haemolytic uraemic syndrome

First publication	19 July 2012
Rev.1: sponsor's change of address	13 March 2015
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 4 July 2012, orphan designation (EU/3/12/1015) was granted by the European Commission to Alexion Europe SAS, France, for eculizumab for the treatment of infection-associated haemolytic uraemic syndrome.

What is infection-associated haemolytic uraemic syndrome?

Haemolytic uraemic syndrome (HUS) is a disorder characterised by three main signs: haemolysis (destruction of red blood cells), thrombocytopenia (a decrease in the number of platelets, components that help the blood to clot) and kidney failure.

The underlying problem in HUS is damage to the cells lining the blood vessels, which causes the destruction of red blood cells passing through the vessels, uses up the platelets in the blood and affects the function of blood vessels in the kidneys.

Infection-associated HUS is thought to be caused by bacteria over-activating part of the immune system called the 'complement system'. The overactive complement system then causes damage to the cells lining the blood vessels, leading to the development of the signs of the disease. Infection-associated HUS usually occurs in children, and is most often caused by a Shiga-toxin-producing bacterial infection, caught through an infected food source.

Infection-associated HUS is a long-lasting and life-threatening disease mainly because of the risk of kidney failure and neurological complications affecting the brain.

30 Churchill Place ● Canary Wharf ● London E14 5EU ● United Kingdom
Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555
Send a question via our website www.ema.europa.eu/contact

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

At the time of designation, infection-associated HUS affected less than 0.07 people in 10,000 per year in the European Union (EU). This was equivalent to a total of fewer than 4,000 people per year*, which was considered to be below the ceiling for orphan designation. 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, only supportive treatments for patients with infection-associated HUS were available. Transfusions of red blood cells and platelets were given as needed. Dialysis (a blood clearance technique) was used if the disease progressed to kidney failure. Some patients received infusion of plasma or a therapy called plasma exchange although its role in this condition was not completely clear. Some patients needed a kidney transplant. In case of neurological complications such as seizures (fits), anti-epileptic medicines were used.

How is this medicine expected to work?

Eculizumab is a medicine that is already authorised in the EU for the treatment of paroxysmal nocturnal haemoglobinuria (PNH) and atypical haemolytic uremic syndrome (aHUS), two rare, life-threatening genetic diseases that cause the destruction of red blood cells resulting in various medical complications. Eculizumab is a monoclonal antibody (a type of protein) that has been designed to recognise and attach to a specific structure called an antigen that is found in the body. Eculizumab has been designed to attach to and block a protein of the complement system called C5.

By attaching to the C5 complement protein, eculizumab is expected to block the activation of the complement system in patients with infection-associated HUS, stopping it from attacking the cells lining the blood vessels. This may reduce damage to the lining of the blood vessel and improve the symptoms of the disease.

What is the stage of development of this medicine?

The effects of eculizumab have been evaluated in experimental models.

At the time of submission of the application for orphan designation, a clinical trial with eculizumab in patients with infection-associated HUS was ongoing.

At the time of submission, eculizumab was not authorised anywhere in the EU for infection-associated HUS. Orphan designation of the medicine had been granted in the United States of America for Shiga-toxin-producing *Escherichia coli* HUS.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 11 May 2012 recommending the granting of this designation.

*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).

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:

Alexion Europe SAS
1-15, avenue Edouard Belin
92500 Rueil-Malmaison
France
Tel. +33 1 47 32 36 21
Fax +33 1 47 10 24 46
E-mail: medicalinformation.europe@alxn.com

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	Eculizumab	Treatment of infection-associated haemolytic uraemic syndrome
Bulgarian	Екулизумаб	Лечение на хемолитично-уремичен синдром, предизвикан от инфекция
Czech	Eculizumab	Léčba hemolyticko-uremického syndromu zapříčiněného infekcí
Danish	Eculizumab	Behandling af infektionsassocieret hæmolytisk uræmisk syndrom
Dutch	Eculizumab	Behandeling van infectie-geassocieerd hemolytisch-uremisch syndroom
Estonian	Ekulizumab	Infektsiooniga seotud hemolüütilis-ureemilise sündroomi ravi
Finnish	Ekulitsumabi	Shigatoksiinin aiheuttaman hemolyyttis-ureemisen oireyhtymän hoito.
French	Eculizumab	Traitement du syndrome hémolytique urémique associé aux infections
German	Eculizumab	Behandlung des parainfektiösen hämolytisch-urämischen Syndroms
Greek	Εκουλιζουμάμπη	Θεραπεία του σχετιζόμενου με λοίμωξη Αιμολυτικού Ουραιμικού Συνδρόμου
Hungarian	Eculizumab	Shiga-toxin okozta haemolyticus uraemiás szindróma kezelése
Italian	Eculizumab	Trattamento della sindrome emolitico-uremica parainfettiva
Latvian	Ekulizumabs	Infekcijas izraisītā hemolītiski urēmiskā sindroma ārstēšana
Lithuanian	Ekulizumabas	Infekcijos sąlygotohemolizinio ureminio sindromo gydymas
Maltese	Eculizumab	Kura tas-sindrome uremika emolitika assoċjata ma' infezzjonijiet
Polish	Ekulizumab	Leczenie zespołu hemolityczno-mocznicowego wywołanego infekcjami
Portuguese	Eculizumab	Tratamento do síndrome hemolítico urémico associado a infecções
Romanian	Eculizumab	Tratamentul sindromului hemolitic uremic de etiologie infecţioasă
Slovak	Ekulizumab	Liečba hemolyticko-uremického syndrómu zapríčineného infekciou
Slovenian	Ekulizumab	Zdravljenje z okužbo povezanega hemolitičnega uremičnega sindroma
Spanish	Eculizumab	Tratamiento del Síndrome Hemolítico Urémico asociado a infecciones
Swedish	Eculizumab	Behandling av infektions-utlöst hemolytiskt uremiskt syndrom
Norwegian	Eculizumab	Behandling av infeksjonsassosiert hemolytisk uremisk syndrom
Icelandic	Ecúlzúmab	Meðferð blóðlýsuþvageitrunarheilkennnis af völdum Shiga-toxíns

[1] At the time of designation