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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Glutathione-pegylated liposomal doxorubicin hydrochloride for the treatment of glioma

First publication	15 October 2010
Rev.1: sponsor's change of address	16 September 2013
Rev.2: withdrawal from the Community Register	17 April 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.	

Please note that this product was withdrawn from the Community Register of designated Orphan Medicinal Products in February 2015 on request of the Sponsor.

On 20 September 2010, orphan designation (EU/3/10/781) was granted by the European Commission to to-BBB technologies BV, the Netherlands, for glutathione-pegylated liposomal doxorubicin hydrochloride for the treatment of glioma.

What is glioma?

Glioma is a type of brain tumour that affects the 'glial' cells (the cells that surround and support the nerve cells). Patients with glioma can have severe symptoms, but the types of symptom experienced depend on where the tumour develops in the brain. Symptoms can include headaches, nausea (feeling sick), loss of appetite, vomiting, and changes in personality, mood, mental capacity and concentration. About a fifth of patients with glioma have seizures (fits) for months or years before the disease is diagnosed.

Glioma is a debilitating and life-threatening disease because it causes severe damage to the brain and is associated with poor long-term survival.

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

At the time of designation, glioma 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 threshold 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, several medicines were authorised for the treatment of glioma in the EU. Treatments for glioma included surgery, radiotherapy (treatment with radiation) and chemotherapy (medicines to treat cancer). Patients also received treatments for the symptoms of glioma, including corticosteroids to reduce pressure within the skull and medicines to prevent seizures.

The sponsor has provided sufficient information to show that glutathione-pegylated liposomal doxorubicin hydrochloride might be of significant benefit for patients with glioma because the medicine is a new formulation of the anticancer medicine doxorubicin. This formulation may allow better delivery of doxorubicin across the blood-brain barrier, which separates the blood from the brain tissue. 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?

Doxorubicin has been available as an anticancer medicine since the 1960s. It is a cytotoxic (cell-killing) medicine that belongs to the group 'anthracyclines'. It works by interfering with the DNA within cells, preventing them from making more copies of DNA and making proteins. This means that cancer cells cannot divide and eventually die.

In this medicine, doxorubicin is contained in 'glutathione-pegylated liposomes', which are tiny fatty spheres that are coated with a natural substance called glutathione. These have been designed to allow doxorubicin to better cross the blood-brain barrier using the 'glutathione transporters', proteins that are found at high levels on the blood-brain barrier and usually move glutathione from the blood into the brain. The liposomes are expected to attach to these transporters, to be carried across the blood-brain barrier into the brain tissue, where they will release the doxorubicin that they contain.

What is the stage of development of this medicine?

At the time of submission of the application for orphan designation, the evaluation of the effects of glutathione-pegylated liposomal doxorubicin hydrochloride in experimental models was ongoing.

At the time of submission of the application for orphan designation, no clinical trials with glutathione-pegylated liposomal doxorubicin hydrochloride in patients with glioma had been started.

At the time of submission, glutathione-pegylated liposomal doxorubicin hydrochloride was not authorised anywhere in the EU for glioma 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 2 June 2010 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 506,300,000 (Eurostat 2010).

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 languages¹, Norwegian and Icelandic

Language	Active ingredient	Indication
English	Glutathione-pegylated liposomal doxorubicin hydrochloride	Treatment of glioma
Bulgarian	Липозомален доксорубицин хидрохлорид, пегилиран с глутатион	Лечение на глиома
Czech	Glutathion pegylovaný liposomální doxorubicin hydrochlorid	Léčba gliomů
Danish	Glutathion-pegyleret liposomal doxorubicinhydrochlorid	Behandling af gliom
Dutch	Glutathion-gepegyleerde liposomale doxorubicine hydrochloride	Behandeling van glioma
Estonian	Glutatioonpegüülitud liposomaalne doksorubitsiinvesinikkloriid	Glioomi ravi
Finnish	Glutathioni-pegyloitu liposomaalinen doksorubisiini hydrokloridi	Gliooman hoito
French	Chlorhydrate de doxorubicine sous forme liposomale glutathion-pégylée	Traitement des gliomes
German	Glutathion pegyliertes liposomales Doxorubicinhydrochlorid	Behandlung von Gliomen
Greek	Πεγκυλιωμένη λιποσωμιακή υδροχλωρική δοξορουμπικίνη με γλουταθειόνη	Θεραπεία του γλοιώματος
Hungarian	Glutation pegilált liposzómás doxorubicin-hidroklorid	Glioma kezelése
Italian	Doxorubicina cloridrato in liposomi glutathion-pegilati	Trattamento del glioma
Latvian	Glutathionu saturošs pegilēts liposomu doksorubicīna hidrohlorīds	Gliomas ārstēšana
Lithuanian	Glutathionu pegiliuotas liposomų doksorubicino hidrochloridas	Gliomos gydymas
Maltese	Doxorubicine hydrochloride liposomal peġilat ma' glutathione	Kura tal-glioma
Polish	Glutation z pegylovanym liposomalnym chlorowodorkiem doksorubicyny	Leczenie glejaka
Portuguese	Cloridrato de doxorubicina encapsulado em lipossomas contendo glutathione peguilada.	Tratamento do glioma
Romanian	Clorhidrat de doxorubicină liposomal pegilat cu glutathion	Tratamentul gliomului
Slovak	Glutathion-pegylovaný lipozómový chlorid doxorubicínu	Liečba gliómu
Slovenian	Glutathionov pegilirani liposomski doksorubicinhidroklorid	Zdravljenje glioma
Spanish	Hidrocloruro de doxorubicina liposomal pegilada con glutatión	Tratamiento del glioma

¹ At the time of designation

Swedish	Glutationpegylerat liposomalt doxorubicinhydroklorid	Behandling av gliom
Norwegian	Glutation PEG-liposomal doksorubicinhydroklorid	Behandling av gliom
Icelandic	Glútatíón pegýlerað lípósómal form af doxórúbicín hýdróklóríði	Meðferð á glíóma