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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Busulfan (intravenous use) for the conditioning treatment prior to haematopoietic progenitor cell transplantation

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Rev.1: withdrawal from the Community Register	23 July 2009
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Please note that this product was withdrawn from the Community Register of designated orphan medicinal products in July 2013 at the end of the period of market exclusivity.

On 29 December 2001, orphan designation (EU/3/00/011) was granted by the European Commission to Pierre Fabre Médicament, France, for busulfan (intravenous use) for the conditioning treatment prior to haematopoietic progenitor cell transplantation.

What is haematopoietic progenitor cell transplantation?

The term “progenitor cell” is used to indicate those cells that are still immature, and do not express all the characteristics of the future mature cells that will be derived from them. Haematopoietic progenitor cells are able to produce the cells of the blood (white blood cells, red blood cells), including the cells of the immune system and of the bone marrow. In some diseases it is necessary to give powerful drugs, which also destroy the haematopoietic progenitor cells in the bone marrow; these bone marrow cells then need to be replaced. In other diseases, the bone marrow or the immune system are absent, or working abnormally. In all these cases, it is sometimes appropriate to use a treatment called “haematopoietic progenitor cell transplantation”. This includes replacing the abnormal cells of the immune system and the bone marrow of the patient by introducing new progenitor cells, generally from another person. Before the transplantation can take place, any existing bone marrow cells have to be eliminated from the patient. This is called “preparation” treatment or “conditioning” treatment. Diseases requiring such transplantation are life-threatening.

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

At the time of designation, haematopoietic progenitor cell transplantation affected 0.7 in 10,000 people in the European Union (EU). This was equivalent to a total of around 27,000 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?

Several chemotherapeutic medicinal products (drugs that kill cancer cells) and irradiation methods (using high energy rays) were authorised for the conditioning treatment prior to haematopoietic progenitor cell transplantation.

Satisfactory argumentation has been submitted by the sponsor to justify the assumption that busulfan might be of potential significant benefit for the conditioning treatment prior to haematopoietic progenitor cell transplantation. This assumption will have to be confirmed at the time of marketing authorisation. This will be necessary to maintain the orphan status.

How is this medicine expected to work?

Busulfan is a so-called alkylating chemotherapeutic agent. It acts by damaging DNA (the genetic material found in every cell) in cells that are rapidly dividing such as cancer cells. This leads to the destruction of the cancer cells.

What is the stage of development of this medicine?

The effects of busulfan were evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials in patients with haematopoietic progenitor cell transplantation were ongoing.

Busulfan was authorised in several countries worldwide for the indicated condition and similar conditions, at the time of submission.

Orphan designation of busulfan was granted in the United States for preparative therapy in the treatment of malignancies with bone marrow transplantation.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 27 October 2000 recommending the granting of this designation.

Update: busulfan (Busilvex) has been authorised in the EU since 9 July 2003 for Busilvex followed by cyclophosphamide (BuCy2) is indicated as conditioning treatment prior to conventional haematopoietic progenitor cell transplantation (HPCT) in adult patients when the combination is considered the best available option.

More information on Busilvex can be found in the European public assessment report (EPAR) on the Agency's website: ema.europa.eu/Find medicine/Human medicines/European Public Assessment Reports

*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.
At the time of designation, this represented a population of 378,800,000 (Eurostat 2001).

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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	Busulfan (Intravenous use)	Conditioning treatment prior to hematopoietic progenitor cell transplantation
Danish	Busulfan (Intravenøs anvendelse)	Konsoliderende behandling før hæmopoietisk progenitor-celletransplantation
Dutch	busulfan (Intraveneus gebruik)	Voorbereidende behandeling van een hematopoietische stamcellentransplantatie
Finnish	Busulfaani (Laskimoon)	Esihoidoksi ennen luuytimen kantasolujen siirtoa
French	Busulfan (Voie intraveineuse)	Traitement de conditionnement préalable à une transplantation de cellules hématopoiétiques souches
German	Busulfan (intravenöse Anwendung)	Zur Konditionierung vor einer hämatopoetischen Stammzelltransplantation.
Greek	Βουσουλφάνη (Ενδοφλέβια χρήση)	Σαν προπαρασκευαστικός παράγοντας σε ασθενείς που πρόκειται να υποβληθούν σε μεταμόσχευσή αιμοποιητικών προγονικών κυττάρων
Italian	Busulfan (Uso endovenoso)	Trattamento di condizionamento prima del trapianto di progenitori cellulari ematopoietici
Potuguese	Busulfan (Via intravenosa)	Tratamento de condicionamento realizado previamente ao transplante de células progenitoras hematopoiéticas."
Spanish	Busulfan (Vía intravenosa)	Tratamiento de acondicionamiento previo a trasplante hematopoyético de células progenitoras
Swedish	Busulfan (Intravenös användning)	Konsoliderande behandling inför stamcellstransplantation

[1] At the time of designation