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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Sequence-modified recombinant human factor VIIa for the treatment of haemophilia B

On 8 October 2009, orphan designation (EU/3/09/676) was granted by the European Commission to Bayer Schering Pharma AG, Germany, for sequence-modified recombinant human factor VIIa for the treatment of haemophilia B.

Bayer Shering Pharma AG changed its name to Bayer Pharma AG in October 2011.

What is haemophilia B?

Haemophilia B is an inherited bleeding disorder that is caused by the lack of a substance called factor IX. Factor IX is one of the human proteins involved in the blood coagulation (clotting) process. Patients with haemophilia B are more prone to bleeding than normal and have poor wound healing after injury or surgery. Bleeding can happen within muscles or the spaces in the joints, such as the elbows, knees and ankles, which can lead to permanent injury if it happens repeatedly.

Haemophilia B is a debilitating disease that is lifelong and may be life threatening because bleeding can also happen in the brain and spinal cord, the throat or the gut.

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

At the time of designation, haemophilia B affected approximately 0.1 in 10,000 people in the European Union (EU)*. This is equivalent to a total of around 5,000 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 knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

At the time of submission of the application for orphan designation, medicines containing factor IX were authorised in the EU for the treatment of haemophilia B. These medicines are used to replace the missing factor IX protein. However, not all patients with haemophilia B can benefit from these

*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 504,800,000 (Eurostat 2009).

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medicines because the immune system (the body's natural defences) can react against them by producing 'inhibitors' (antibodies) against factor IX. In these cases, other treatments needed to be used, such as medicines containing other coagulation factors such as factor VIIa, either alone or as part of combination treatment.

The sponsor has provided sufficient information to show that sequence-modified recombinant human factor VIIa might be of significant benefit for patients with haemophilia B because it could be used in haemophilia B patients who have developed inhibitors against factor IX and it might be given less often than existing treatments. 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?

Sequence-modified recombinant human factor VIIa is expected to work in the same way as human protein factor VIIa. In the body, factor VIIa is involved in blood clotting. It activates another factor called factor X, which starts the clotting process. By activating factor X, this medicine is expected to control the bleeding disorder in patients who have developed inhibitors to factor IX because it acts directly on factor X, independently of factor IX.

Sequence-modified recombinant human factor VIIa is made by a method known as 'recombinant DNA technology': it is made by a cell that has received the human gene (DNA) that makes it able to produce factor VIIa. The protein has also been modified: its sequence of amino acids (the building blocks of proteins) is slightly different from that of naturally occurring factor VIIa, which may result in it activating more factor X than existing medicines.

What is the stage of development of this medicine?

The effects of sequence-modified recombinant human factor VIIa have been evaluated in experimental models.

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

At the time of submission, sequence-modified recombinant human factor VIIa was not authorised anywhere in the EU for haemophilia B 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 8 July 2009 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	Sequence-modified recombinant human factor VIIa	Treatment of haemophilia B
Bulgarian	Човешки рекомбинантен фактор VIIa с модифицирана последователност	Лечение на хемофилия Б
Czech	Lidský rekombinantní faktor VIIa s modifikovanými sekvencemi	Léčba hemofilie B
Danish	Sekvens-modificeret rekombinant human faktor VIIa	Behandling af hæmofili B
Dutch	Sequentie gemodificeerd recombinant-humaan factor VIIa	Behandeling van hemofilie B
Estonian	Muudetud järjestusega rekombinantne inimese faktor VIIa	Hemofiilia B ravi
Finnish	Ihmisen rekombinantti tekijä VIIa, jonka sekvenssiä on muunneltu	Hemofilia B:n hoito
French	Facteur VIIa humain recombinant de séquence modifiée	Traitement de l'hémophilie B
German	Sequenz-modifizierter rekombinanter humaner Faktor VIIa	Behandlung der Hämophilie B
Greek	Ανασυνδυασμένος ανθρώπινος παράγοντας VIIa τροποποιημένης αλληλουχίας	Θεραπεία της αιμορροφιλίας Β
Hungarian	Módosított szekvenciájú rekombináns humán VIIa faktor	B típusú hemofília kezelése
Italian	Fattore VIIa umano ricombinante a sequenza modificata	Trattamento dell'emofilia B
Latvian	Sekvenču modificēts cilvēka rekombinētais faktors VIIa	B tipa hemofilijas ārstēšana
Lithuanian	Modifikuota žmogaus rekombinantinio VIIa faktoriaus seka	Hemofilijos B gydymas
Maltese	Fattur VIIa uman rikombinanti b'sekwenza modifikata	Kura ta' l-emofilja B
Polish	Rekombinowany ludzki czynnik VIIa o zmodyfikowanej sekwencji	Leczenie hemofilii B
Portuguese	Factor VIIa recombinante humano de sequência modificada	Tratamento da hemofilia B
Romanian	Factor VIIa uman recombinant cu secvenţă modificată	Tratamentul hemofiliei B
Slovak	Rekombinantný ľudský faktor VIIa s modifikovanou sekvenciou	Liečba hemofílie B
Slovenian	Rekombinantni človeški faktor VIIa s spremenjenim zaporedjem	Zdravljenje hemofilije B
Spanish	Factor VIIa humano recombinante con secuencia modificada	Tratamiento de la hemofilia B
Swedish	Sekvensmodifierad rekombinant human faktor VIIa	Behandling av hemofili B

[1] At the time of designation

Language	Active ingredient	Indication
Norwegian	Sekvens-modifisert rekombinant human faktor VIIa	Behandling av hemofili B
Icelandic	Raðbrigða manna storkuþáttur VIIa aðlagaðri röðun	Meðferð við dreyrasýki B