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Public summary of opinion on orphan designation

Allogeneic retinal pigment epithelial cells genetically modified with a non-viral vector to express beta-domain deleted human factor VIII for the treatment of haemophilia A

On 9 December 2020, orphan designation EU/3/20/2380 was granted by the European Commission to TMC Pharma (EU) Limited, Ireland, for allogeneic retinal pigment epithelial cells genetically modified with a non-viral vector to express beta-domain deleted human factor VIII (also known as SIG-001) for the treatment of haemophilia A.

What is haemophilia A?

Haemophilia A is an inherited bleeding disorder caused by the lack of factor VIII, one of the proteins involved in blood coagulation (clotting). Patients with haemophilia A are prone to bleeding and bleed for a long time after injury or surgery. Bleeding can also happen within muscles or in the joints, such as the elbows, knees and ankles. This can lead to permanent injury if it happens repeatedly.

Haemophilia A is a debilitating disease that is life long and may be life threatening because bleeding can occur in the brain, spinal cord or gut.

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

At the time of designation, haemophilia A affected approximately 0.7 in 10,000 people in the European Union (EU). This was equivalent to a total of around 36,000 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, several treatments were authorised including medicines containing factor VIII for replacing the missing protein.

*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, Iceland, Liechtenstein, Norway and the United Kingdom. This represents a population of 519,200,000 (Eurostat 2020).

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The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with haemophilia A because laboratory studies show that the medicine could lead to long-term production of factor VIII in patients' bodies and reduce the need for treatment to replace factor VIII.

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 medicine is made from human cells which have been modified to contain genetic material that can produce factor VIII. The cells are mixed with alginate, a natural substance found in seaweed, which forms a protective shielding around the cells, keeping them intact for a long time. The medicine is to be placed in the abdomen, where it is expected to continuously produce the factor VIII that the patient lacks. This is expected to alleviate symptoms of haemophilia A.

What is the stage of development of this medicine?

The effects of this medicine have been evaluated in experimental models.

At the time of submission of the application for orphan designation, no clinical trials in patients with haemophilia A had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for the treatment of haemophilia A. Orphan designation had been granted in the United States for the treatment of haemophilia A.

In accordance with Regulation (EC) No 141/2000, the COMP adopted a positive opinion on 5 November 2020, recommending the granting of this designation.

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

Contact details of the current sponsor for this orphan designation can be found on EMA website.

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.