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Public summary of opinion on orphan designation

Tremelimumab for the treatment of hepatocellular carcinoma

On 9 December 2020, orphan designation EU/3/20/2370 was granted by the European Commission to AstraZeneca AB, Sweden, for tremelimumab for the treatment of hepatocellular carcinoma.

What is hepatocellular carcinoma?

Hepatocellular carcinoma is a primary cancer of the liver (a cancer that starts in the liver, rather than one that has spread to the liver from elsewhere in the body). It is more common in men than in women and occurs mostly in people who have liver scarring (cirrhosis), or after hepatitis B or C infection. Features of the disease include yellow skin, pain and swelling in the belly, easy bruising, weight loss, weakness, loss of appetite and nausea (feeling sick).

Hepatocellular carcinoma is a long-term debilitating and life-threatening condition, with most patients surviving from a few months to a few years after diagnosis, depending on the stage of the disease at diagnosis.

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

At the time of designation, hepatocellular carcinoma affected less than 2 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 104,000 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, some patients with early stage hepatocellular carcinoma were treated with surgery to remove part of the liver, liver transplantation or radiofrequency ablation (directing heat and electricity through a needle to destroy cancer cells). Chemotherapy (medicines to treat cancer) was used if surgery was not possible or the disease had spread to other parts of the body (metastatic disease). A number of medicines, including lenvatinib and sorafenib were authorised in the EU for use in hepatocellular carcinoma.

*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 hepatocellular carcinoma because early studies suggest that the life expectancy of patients treated with the medicine compared favourably with other treatments for hepatocellular carcinoma.

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?

Tremelimumab is a monoclonal antibody (a type of protein) designed to attach to and block CTLA-4, a protein that reduces the activity of T cells, which are part of the immune system (the body's natural defences). By blocking CTLA-4, the medicine increases the activation of T cells, which can then kill cancer cells. This is expected to slow down the spread of liver cancer.

What is the stage of development of this medicine?

The effects of tremelimumab have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with tremelimumab in patients with hepatocellular carcinoma were ongoing.

At the time of submission, tremelimumab was not authorised anywhere in the EU for the treatment of hepatocellular carcinoma. Orphan designation of tremelimumab had been granted in USA for this condition.

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.