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EMA/COMP/744276/2014
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Genetically modified serotype 5/3 adenovirus coding for granulocyte macrophage colony-stimulating factor for the treatment of malignant mesothelioma

On 16 December 2014, orphan designation (EU/3/14/1398) was granted by the European Commission to Oncos Therapeutics Oy, Finland, for genetically modified serotype 5/3 adenovirus coding for granulocyte macrophage colony-stimulating factor for the treatment of malignant mesothelioma.

What is malignant mesothelioma?

Malignant mesothelioma is a cancer that affects the mesothelial cells (found on the inner linings of the organs), mainly in the pleura (lining the lungs) and in the peritoneum (lining the abdominal cavity). It is usually caused by exposure to asbestos. Mesothelioma of the pleura causes difficulty breathing and chest pain, and mesothelioma of the peritoneum causes ascites (a build-up of fluid in the abdomen) and abdominal pain.

Malignant mesothelioma is life-threatening because it may lead to bowel obstruction, heart or breathing problems and lung infections. Survival is poor, with patients only living, on average, for a year after diagnosis.

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

At the time of designation, malignant mesothelioma affected less than 0.5 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 26,000 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, the main treatment for malignant mesothelioma was surgery followed by chemotherapy (medicines to treat cancer) or radiotherapy (treatment with radiation). If the disease

*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 28), Norway, Iceland and Liechtenstein. This represents a population of 511,100,000 (Eurostat 2014).

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was too advanced for surgery, chemotherapy alone was used. Only one medicine, pemetrexed, was specifically authorised in the EU for the treatment of malignant pleural mesothelioma.

The sponsor has provided sufficient information to show that genetically modified serotype 5/3 adenovirus coding for granulocyte macrophage colony-stimulating factor might be of significant benefit for patients with the condition. Studies in experimental models have shown improved effects of the medicine when used together with currently available treatments, while early studies in patients showed benefits in patients whose disease had come back. 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?

This medicine contains a virus that has been modified so that it can only replicate (multiply) in cancer cells. When the medicine is injected into a patient with malignant mesothelioma cancer, the virus is expected to selectively attach to the cancer cells, multiply within the cells and then eventually kill them. In addition, the virus contains a gene so that it can produce a protein called 'granulocyte-macrophage colony-stimulating factor' (GM-CSF). GM-CSF is a protein that stimulates the immune system (the body's natural defences) to attack the cancerous cells.

What is the stage of development of this medicine?

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

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

At the time of submission, the medicine was not authorised anywhere in the EU for malignant mesothelioma 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 13 November 2014 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	Genetically modified serotype 5/3 adenovirus coding for granulocyte macrophage colony-stimulating factor	Treatment of malignant mesothelioma
Bulgarian	Генетично модифициран аденовирус серотип 5/3, кодиращ гранулоцит макрофаг колония-стимулиращ фактор	Лечение на малигнен мезотелиом
Croatian	Genetski modificiran adenovirus serotipa 5/3 koji kodira faktor stimulacije rasta granulocitno-makrofagnih kolonija	Liječenje malignog mezotelioma
Czech	Geneticky modifikovaný adenovirus sérotypu 5/3 kódující faktor stimulující kolonie granulocytů a makrofágů	Léčba maligního mezoteliomu
Danish	Genetisk modificeret serotype 5/3-adenovirus, der koder for granulocyt/makrofag-kolonistimulerende faktor	Behandling af malignt mesotheliom
Dutch	Genetisch gemodificeerd adenovirus serotype 5/3 dat codeert voor granulocyt-macrofaag koloniestimulerende factor	Behandeling van maligne mesothelioom
Estonian	Granulotsüütide-makrofaagide kolooniaid stimuleerivat faktorit kodeeriv adenoviiruse geneetiliselt muundatud serotüüp 5/3	Pahaloomulise mesotelioomi ravi
Finnish	Granulosyytti-makrofagikasvutekijää koodaava serotyypin 5/3 muuntogeeninen adenovirus	Malignin mesoteliooman hoito
French	Adénovirus de sérotype 5/3 génétiquement modifié codant pour le facteur de croissance des granulocytes-macrophages	Traitement du mésothéliome malin
German	Genetisch modifiziertes Adenovirus vom Serotyp 5/3, das für den Granulozyten-Makrophagen koloniestimulierenden Faktor kodiert	Behandlung des malignen Mesothelioms
Greek	Γενετικά τροποποιημένος αδενοϊός ορότυπου 5/3 που κωδικοποιεί τον παράγοντα διέγερσης αποικιών κοκκιοκυττάρων-μακροφάγων	Θεραπεία κακοήθους μεσοθηλιώματος
Hungarian	Granulocyta-makrofág kolóniastimuláló faktort kódoló, genetikailag módosított 5/3-as szerotípusú adenovírus	Malignus mesothelioma kezelése
Italian	Adenovirus di sierotipo 5/3 geneticamente modificato che codifica per il fattore stimolante le colonie di granulociti e macrofagi	Trattamento del mesotelioma maligno
Latvian	Ģenētiski modificēts 5/3 serotipa adenovīruss, kas kodē granulocītu makrofāgu koloniju stimulējošo faktoru	Ļaundabīgas mezoteliomas ārstēšana

[1] At the time of designation

Language	Active ingredient	Indication
Lithuanian	Genetiškai modifikuotas serotipo 5/3 adenovirusas, koduojantis granuliocitų makrofagų kolonijas stimuliuojantį faktorių	Piktybinės mezoteliomos gydymas
Maltese	Adenovirus ta' serotip 5/3 modifikat ġenetikament li jikkodifika għall-fattur li jistimula kolonji makrofagu-granuloċita	Kura tal-mesoteljoma malinna
Polish	Genetycznie zmodyfikowany adenowirus serotypu 5/3 kodujący czynnik stymulujący wzrost kolonii granulocytów i makrofagów	Leczenie złośliwego międzybłoniaka
Portuguese	Adenovírus de serotipo 5/3 geneticamente modificado codificando o fator estimulador de colónias de granulócitos e macrófagos	Tratamento do Mesotelioma maligno
Romanian	Adenovirus serotip 5/3 modificat genetic pentru a codifica factorul de stimulare al coloniilor formatoare de granulocite macrofage	Tratamentul mezoteliomului malign
Slovak	Geneticky modifikovaný adenovírus sérotypu 5/3 kódujúci faktor stimulujúci kolónie granulocytov a makrofágov	Liečba malígneho mezoteliómu
Slovenian	Genetsko spremenjeni adenovirus serotipa 5/3, kodiran za spodbujajoči faktor kolonij granulocitnih makrofagov	Zdravljenje malignega mezotelioma
Spanish	Adenovirus de serotipo 5/3 genéticamente modificado que codifica el factor estimulante de colonias de granulocitos-macrófagos	Tratamiento del mesotelioma maligno
Swedish	Genetiskt modifierat adenovirus serotyp 5/3 som kodar för granulocyt-makrofagkolonistimulerande faktor	Behandling av malignt mesoteliom
Norwegian	Genetisk modifisert adenovirus serotype 5/3 som koder for granulocytt-makrofag-kolonistimulerende faktor	Behandling av malignt mesoteliom
Icelandic	Erfðabreytt adenóveira af sermisgerð 5/3 sem kóðar fyrir GM-CSF vaxtarþætti	Meðferð við illkynja miðþekjuæxli