13 November 2015
EMA/COMP/597518/2015
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Autologous T cells transduced with retroviral vector encoding an anti-CD19 CD28/CD3-zeta chimeric antigen receptor for the treatment of primary mediastinal large B-cell lymphoma

On 9 October 2015, orphan designation (EU/3/15/1553) was granted by the European Commission to Kite Pharma UK, Ltd, United Kingdom, for autologous T cells transduced with retroviral vector encoding an anti-CD19 CD28/CD3-zeta chimeric antigen receptor for the treatment of primary mediastinal large B-cell lymphoma.

What is primary mediastinal large B-cell lymphoma?

Primary mediastinal large B-cell lymphoma is an aggressive cancer of a type of white blood cell called B lymphocytes, or B cells. In patients with this cancer, the B cells multiply too quickly and live for too long. Patients with primary mediastinal large B-cell lymphoma usually present with a tumour mass in the chest cavity. The mass may cause breathlessness, coughing and swelling in the face and arm.

Primary mediastinal lymphoma is more common in women and typically affects people younger than 40 years. Although some people with primary mediastinal large B-cell lymphoma can be cured, it remains a serious and life-threatening disease, particularly when the disease is diagnosed late or has come back after initial treatment.

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

At the time of designation, primary mediastinal large B-cell lymphoma affected approximately 0.3 in 10,000 people in the European Union (EU). This was equivalent to a total of around 15,000 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).

[*]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 512,900,000 (Eurostat 2015).

30 Churchill Place ● Canary Wharf ● London E14 5EU ● United Kingdom
Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555
Send a question via our website www.ema.europa.eu/contact

What treatments are available?

At the time of designation, the main treatment for primary mediastinal large B-cell lymphoma was chemotherapy (medicines to treat cancer) usually in combination with other medicines called monoclonal antibodies and sometimes in combination with radiotherapy (treatment with radiation). Autologous haematopoietic (blood) stem-cell transplantation was also used in patients at risk of the disease coming back after treatment. This is a complex procedure where patients receive their own stem cells to help restore the bone marrow.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with primary mediastinal large B-cell lymphoma because preliminary studies showed that it may improve the outcome of patients whose disease has come back after previous treatment or did not respond to previous treatment. 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 abnormal B cells in patients with primary mediastinal large B-cell lymphoma produce a protein on their surface called CD19.

This medicine is made up of immune cells (called T cells) which are taken from the patient and modified in the laboratory with a virus that carries a gene into the T cells so that they can recognise and attach to CD19. The modified T cells are then given back to the patient, where they are expected to attach to CD19 on the cancer cells and kill them. These T cells are also expected to activate other T cells from the patient to act against the cancer cells.

The type of virus used in this medicine ('retrovirus') is modified in order not to cause disease in humans.

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 with the medicine in patients with primary mediastinal large B-cell lymphoma were ongoing.

At the time of submission, the medicine was not authorised anywhere in the EU for primary mediastinal large B-cell lymphoma 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 3 September 2015 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

For details of the current sponsor of the orphan designation please refer to the information on the main web page of this Public Summary of Opinion.

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	Autologous T cells transduced with retroviral vector encoding an anti-CD19 CD28/CD3-zeta chimeric antigen receptor	Treatment of primary mediastinal large B-cell lymphoma
Bulgarian	Автоложни Т клетки, трансдуцирани с ретровирусен вектор, кодиращ химеричен анти-CD19 CD28/CD3-дзета антигенен рецептор	Лечение на първичен медиастинален В-едроклетъчен лимфом
Croatian	Autologne T-stanice transducirane retrovirusnim vektorom koji kodira za kimerični antigenski receptor CD28/CD3-zeta usmjeren protiv CD19	Liječenje primarnog medijastinalnog B-velikostaničnog limfoma
Czech	Autologní T buňky transdukované retrovirovým vektorem kódujícím anti-CD19 chimérický antigenní receptor odvozený z řetězce CD28/CD3 zeta	Léčba primárního mediastinálního velkobuněčného B lymfomu
Danish	Autologe T-celler transduceret med retroviral vektor, der koder en anti-CD19 kimær antigenreceptor udledt af CD28/zetakæde CD3	Behandling af primært mediastinalt storcellet B-celle lymfom
Dutch	Autologe T-cellen getransduceerd met een retrovirale vector die voor een anti-CD19 chimere antigeenreceptor afgeleid van CD28/CD3-zeta codeert	Behandeling van primair mediastinaal grootcellig B-cellymfoom
Estonian	Autoloogsed T-rakud, mida on transdutseeritud retrovirusvektoriga, mis kodeerib CD19-vastast CD28 / tseetaahelaga CD3 kimäärse antigeeni retseptorit	Esmase mediastinaalse suure B-rakulise lümfoomi ravi
Finnish	Autologiset T-solut, joihin on retrovirusvektorin avulla istutettu anti-CD19 CD28/CD3 zeta-kimeerisen antigeenireseptorin koodi	Primaarin mediastinaalisen suurisoluisen B-solulymfooman hoitoon
French	Lymphocytes T autologues transduits par un vecteur rétroviral codant pour un récepteur antigénique chimérique anti-CD19 dérivé de CD3/CD28 zêta	Traitement du lymphome médiastinal primitif à grandes cellules B
German	Autologe T-Zellen, die mit einem retroviralen Vektor transduziert werden, der einen von CD28/CD3-zeta abgeleiteten chimären Anti-CD19-Antigenrezeptor kodiert	Behandlung des primär mediastinalen großzelligen B-Zell-Lymphoms
Greek	Αυτόλογα Τ-κύτταρα διαμολυσμένα με ρετροϊικό φορέα, ο οποίος κωδικοποιεί έναν αντι-CD19 χιμαιρικό CD28/CD3-ζ αντιγονικό υποδοχέα	Θεραπεία πρωτοπαθούς λεμφώματος μεσοθωρακίου από μεγάλα Β-κύτταρα
Hungarian	Anti-CD19 CD28/CD3 zéta kiméra antigén receptort kódoló retrovírus vektorral transzdukált autológ T-sejtek	Elsődleges mediastinalis nagysejtes B-sejt lymphoma kezelése

[1] At the time of designation

Language	Active ingredient	Indication
Italian	Cellule T autologhe trasdotte con vettore retrovirale che codifica per un recettore chimerico dell'antigene anti-CD19 derivato da CD28/CD3 zeta	Trattamento del linfoma primitivo del mediastino a grandi cellule B
Latvian	Autologas T šūnas, transducētas ar retrovirālu vektoru, kas kodē himērisku anti-CD19 CD28/CD3 zeta antigēna receptoru	Videnes lielo B šūnu primārās limfomas ārstēšana
Lithuanian	Autologinės T ląstelės, transdukuotos su retrovirusiniu vektoriumi, koduojančiu anti-CD19 CD28/CD3 zeta chimerinio antigeno receptorių	Pirminės tarpuplaučio didelių B ląstelių limfomos gydymas
Maltese	Ċelluli T awtologużi trasformati permezz ta' vettur retrotivirali li jikkodifika riċettur antiġeniku kimeriku kontra CD19 assoċjat ma' CD28/CD3 żeta	Kura tal-limfoma primarja medjastinali taċ-ċelloli B kbar
Polish	Autologiczne limfocyty T transdukowane wektorem retrowirusowym kodującym chimeryczne receptory antygenowe przeciwciał anty-CD19 pochodzących z łańcucha CD28/CD3 zeta	Leczenie pierwotnego śródpiersiowego chłoniaka dużych komórek B
Portuguese	Células T autólogas transduzidas com um vetor retroviral codificando um recetor antigénico quimérico anti-CD19 CD28/CD3 zeta	Tratamento do linfoma primário do mediastino de grandes células B
Romanian	Celule T autologe transduse cu un vector retroviral ce codifică un receptor chimeric al antigenelor anti-CD19 si CD28/CD3 zeta	Tratamentul limfomului primar mediastinal cu celule B mari
Slovak	Autológne T bunky transdukované retrovírusovým vektorom kódujúcim chimérický antigénový receptor anti- CD19 a CD28/CD3 zeta	Liečba primárneho mediastinálneho veľkobunkového B-lymfómu
Slovenian	Avtologne celice T, transducirane z retrovirusnim vektorjem, ki kodira himerni antigenski receptor anti-CD19 CD28/CD3	Zdravljenje primarnega mediastinalnega velikoceličnega B-limfoma
Spanish	Células T autólogas transducidas con un vector retroviral que codifica un receptor quimérico de antígeno anti-CD19 derivado de CD28/CD3 zeta	Tratamiento del linfoma mediastínico primario de células B grandes
Swedish	Autologa T-celler transducerade med en retroviral vektor som kodar för en CD19-specifik chimär antigenreceptor från CD28/CD3-zetakedjan	Behandling av primärt mediastinalt storcelligt B-cellslymfom
Norwegian	Autologe T-celler transdusert med retroviral vektor som koder for en anti-CD19 CD28/CD3 zeta kimær antigenreseptor	Behandling av primært mediastinalt storcellet B-celle-lymfom
Icelandic	Samgena T-frumur, umbreyttar með retróveiruferju, sem kóðar blendingsmótefnavakaviðtaka gegn CD19 úr CD28/CD3-zetakeðju	Meðferð á frumkomnu stórfrumu B-eitilfrumukrabbameini í miðmæti