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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Allogeneic CD34+ cells expanded ex vivo with an aryl hydrocarbon receptor antagonist for the treatment of acute lymphoblastic leukaemia

On 16 December 2014, orphan designation (EU/3/14/1382) was granted by the European Commission to Novartis Europharm Limited, United Kingdom, for allogeneic CD34+ cells expanded ex vivo with an aryl hydrocarbon receptor antagonist for the treatment of acute lymphoblastic leukaemia.

What is acute lymphoblastic leukaemia?

Acute lymphoblastic leukaemia (ALL) is a cancer of the white blood cells called lymphocytes. In ALL, the lymphocytes multiply too quickly and live for too long so there are too many of them circulating in the blood. These abnormal lymphocytes are not fully developed and do not work properly. Over a period of time, they replace the normal white blood cells, red blood cells and platelets in the bloodstream and the bone marrow (the spongy tissue inside the large bones in the body, where blood cells are produced).

ALL is a long-term debilitating and life-threatening disease because the abnormal immature cells take the place of the normal blood cells, reducing the patient's ability to fight infections and causing organ damage.

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

At the time of designation ALL affected approximately 1.3 in 10,000 people in the European Union (EU). This was equivalent to a total of around 66,000 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 511,100,000 (Eurostat 2014).

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What treatments are available?

Treatment for ALL is complex and depends on a number of factors including the extent of the disease, whether it has been treated before and the patient's age, symptoms and general state of health. At the time of designation, the main treatment for ALL was chemotherapy (medicines to treat cancer) followed by or combined with radiotherapy (treatment with radiation). Haematopoietic (blood) stem-cell transplantation (HSCT) was also used. This is a complex procedure where the patient receives stem cells from a matched donor to help restore the bone marrow.

The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with ALL because experimental and early clinical studies showed that it might help rebuild the patient's blood and immune system faster following HSCT with umbilical cord blood. This is expected to restore the ability to fight infections and thus improve the outcome of patients with ALL. These assumptions 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 is made up of blood stem cells taken after birth from the blood found in the umbilical cord that connects a baby to the placenta. Such blood is rich in blood stem cells that can be used for HSCT. These cells (called CD34+) are grown in the laboratory, in order to increase their numbers. They are then given to the patient by infusion (drip) into a vein, together with more mature blood cells (called CD34 negative) which were initially removed from the umbilical cord blood. Because one dose of the medicine would contain more CD34+ cells than 'untreated' umbilical cord blood, the medicine is expected to help a faster recovery of the patient's immune and blood cells, thereby improving the survival of patients.

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 ALL were ongoing.

At the time of submission, the medicine was not authorised anywhere in the EU for ALL. Orphan designation of the medicine has been granted in the United States for ALL.

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.

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	Allogeneic CD34+ cells expanded ex vivo with an aryl hydrocarbon receptor antagonist	Treatment of acute lymphoblastic leukaemia
Bulgarian	Алогенни CD34+ клетки умножени екс виво с арил въглеводороден рецепторен антагонист	Лечение на остра лимфобластна левкемия
Croatian	Alogene CD34+ stanice umnožene ex vivo s antagonistom arilugljikovodičnog receptora	Liječenje akutne limfoblastične leukemije
Czech	Alogenní CD34+ buňky ex vivo expandované antagonistou arylhydrokarbonového receptoru	Léčba akutní lymfoblastické leukémie
Danish	Allogene CD34+ celler ex vivo-ekspanderet med en aryl-hydrocarbon-receptor antagonist	Behandling af akut lymfoblastær leukæmi
Dutch	Allogene CD34+cellen ex-vivo geëxpandeerd met een aryl hydrocarbon receptor antagonist	Behandeling van acute lymfoblastaire leukemie
Estonian	Arüülsüsivesinike retseptori antagonistiga ex vivo kasvatatud allogeensed CD34+ rakud	Ägeda lümfoblastilise leukeemia ravi
Finnish	Elimistön ulkopuolella aryyli-hiilivetyreseptoriantagonistin kanssa viljellyt allogeeniset CD34+-solut	Akuutin lymfoblastileukemian hoito
French	Cellules allogéniques CD34+ expandues ex vivo avec un antagoniste du récepteur aryl-hydrocarbone	Traitement de la leucémie lymphoblastique aiguë
German	Allogene CD34+ Zellen, die ex-vivo mit einem Aryl-Hydrocarbon Rezeptor-Antagonisten vermehrt werden	Behandlung der akuten lymphatischen Leukämie
Greek	Αλλογενή CD34+ κύτταρα πολλαπλασιασμένα ex-vivo με έναν ανταγωνιστή του υποδοχέα αρυλ-υδρογονανθράκων	Θεραπεία της οξείας λεμφοβλαστικής λευχαιμίας
Hungarian	Aril-hidrokarbon-receptor antagonistával ex vivo szaporított allogén CD34+ sejtek	Akut lymphoblastos leukaemia kezelése
Italian	Cellule allogeniche CD34+ espanse ex vivo con un antagonista del recettore arilico	Trattamento della leucemia linfoblastica acuta
Latvian	Alogēnas CD34+ šūnas, kas *ex vivo* pavairotas ar aromātisko ogļūdeņražu receptoru antagonistu	Akūtas limfoblastiskas leikozes ārstēšana
Lithuanian	Alogeninės CD34+ ląstelės, pagausintos ex vivo su aril hidrokarbono receptoriaus antagonistu	Ūmios limfoblastinės leukemijos gydymas
Maltese	Ċelluli alloġeniċi CD34+ mwassa' ex vivo permezz ta' antagonist għar-riċettur tal-aryl hydrocarbon	Kura tal-lewkimja limfoblastika akuta
Polish	Allogeniczne komórki CD34+ poekspansji w warunkach ex vivo z antagonistą receptora wodorowęglanu arylu	Leczenie ostrej białaczki limfoblastycznej
Portuguese	Células CD34+ alogênicas expandidas *ex vivo* com um antagonista do recetor aril hidrocarboneto	Tratamento da leucémia linfoblástica aguda

[1] At the time of designation

Language	Active ingredient	Indication
Romanian	Celule alogenice CD34+, expandate ex vivo cu un antagonist al receptorului aril hidrocarbon	Tratamentul leucemiei limfoblastice acute
Slovak	Alogénne bunky CD34+ rozšírené ex vivo s antagonistom aryluhľovodíkového receptora	Liečba akútnej lymfoblastickej leukémie
Slovenian	Alogenske celice CD34+ z ex vivo dodanim antagonistom arilhidrokarbonskih receptorjev	Zdravljenje akutne limfoblastne levkemije
Spanish	Células alogénicas CD34 positivas expandidas ex vivo con un antagonista del receptor de aril-hidrocarburos	Tratamiento de la leucemia linfoblástica aguda
Swedish	Allogena CD34+ celler expanderade ex vivo med Ah-receptorantagonist	Behandling av akut lymfatisk leukemi
Norwegian	Allogene CD34+ celler ex vivo-ekspandert med en arylhydrokarbonreseptorantagonist	Behandling av akutt lymfoblastisk leukemi
Icelandic	Ósamgena CD34+ frumur fjölgað ex vivo, með arýl hýdrókarbón viðtakablokka	Meðferð við bráðu eitilfrumuhvítblæði