2 March 2015
EMA/COMP/786995/2014
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Allogeneic, umbilical cord blood-derived, ex vivo-expanded, haematopoietic CD133+ cells / allogeneic, umbilical cord blood-derived, non-expanded, haematopoietic CD133- cells for the treatment of acute myeloid leukaemia

On 15 January 2015, orphan designation (EU/3/14/1413) was granted by the European Commission to Regulatory Resources Group Ltd, United Kingdom, for allogeneic, umbilical cord blood-derived, ex vivo-expanded, haematopoietic CD133+ cells / allogeneic, umbilical cord blood-derived, non-expanded, haematopoietic CD133- cells for the treatment of acute myeloid leukaemia.

What is acute myeloid leukaemia?

Acute myeloid leukaemia (AML) is a cancer of the white blood cells (cells that fight against infections). In patients with AML, the bone marrow (the spongy tissue inside the large bones, where blood cells are produced) produces large numbers of abnormal, immature white blood cells. These abnormal cells quickly build up in large numbers in the bone marrow and are found in the blood.

AML is a long-term debilitating and life-threatening disease because these abnormal immature cells take the place of the normal blood cells, causing bleeding episodes and blood clots, and reducing the patient's ability to fight infections.

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

At the time of designation, AML affected approximately 1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 51,000 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?

Treatment for AML 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

*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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the time of designation, the main treatments for AML were chemotherapy (medicines to treat cancer) and haematopoietic (blood) stem-cell transplantation (HSCT, 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 AML because preliminary studies suggest that it could enable more patients to receive HSCT. 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 blood present in the umbilical cord that connects the baby to the placenta (cord blood) is rich in immature stem cells that can be used for HSCT, and which have a lower risk than adult stem cells of being rejected by the donor or of attacking the donor's own cells (graft-versus-host disease). In addition, cord blood can be collected without the need for a surgical procedure. However, because of the small volumes of cord blood, the overall numbers of stem cells collected this way are generally too low to be useful in adults.

The medicine consists of cord blood from which some of the stem cells (called CD133+ cells) have been extracted and grown in the laboratory to increase their numbers, before adding them back to the blood. The enriched cord blood with its increased number of stem cells can then be used to restore normal bone marrow in patients with AML.

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, clinical trials with the medicine in patients with AML were ongoing.

At the time of submission, the medicine was not authorised anywhere in the EU for AML. Orphan designation of the medicine had been granted in the United States for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 11 December 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	Allogeneic, umbilical cord blood-derived, ex vivo-expanded, haematopoietic CD133+ cells / allogeneic, umbilical cord blood-derived, non-expanded, haematopoietic CD133- cells	Treatment of acute myeloid leukaemia
Bulgarian	Алогенни хемопоетични CD133+ клетки, извлечени от пъпната връв, с ex vivo клетъчна експанзия / алогенни CD133+ хемопоетични клетки, извлечени от пъпната връв, без клетъчна експанзия	Лечение на остра миелоидна левкемия
Croatian	Alogene hematopoetske stanice CD133 + izvedene iz krvi pupčane vrpce, umnožene ex vivo / alogene hematopoetske stanice CD133-izvedene iz krvi pupčane vrpce, neumnožene	Liječenje akutne mijeloične leukemije
Czech	Hematopoetické CD133+ buňky získané z alogenní pupečníkové krve, expandované mimo živé organismy / neexpandované hematopoetické CD133- buňky získané z alogenní pupečníkové krve	Léčba akutní myeloidní leukémie
Danish	Allogen, navlestrengs blodafledt, ex vivo ekspanderede, hæmatopoietisk CD133+ celler / allogen, navlestrengs blodafledt, ikke-ekspanderede, hæmatopoietiske CD133- celler	Behandling af akut myeloid leukæmi
Dutch	Allogene navelstrengbloed afgeleide, ex vivo geëxpandeerde, hematopoiëtische cd133+ cellen / allogene navelstrengbloed afgeleide, niet-geëxpandeerde, hematopoiëtische CD133- cellen	Behandeling van acute myeloïde leukemie
Estonian	Allogeensed nabaväädist lähtuvad ex vivo laiendatud vereloome CD133+ rakud / allogeensed nabaväädist lähtuvad mittelaiendatud vereloome CD133- rakud	Akuutse müeloidse leukeemia ravi
Finnish	Allogeeniset, napanuoraverestä peräisin olevat, ex vivo -laajennetut, hematopoieettiset CD133+ -solut / allogeeniset, napanuoraverestä peräisin olevat, ei-laajennetut, hematopoieettiset CD133- -solut	Akuutin myelooisen leukemian hoito
French	Cellules hématopoïétiques CD133+, de croissance ex vivo, allogéniques, dérivées du sang de cordon ombilical / cellules hématopoïétiques CD133- non expansées, allogéniques, dérivées du sang de cordon ombilical	Traitement de la leucémie aiguë myéloïde

[1] At the time of designation

Language	Active ingredient	Indication
German	Aus allogenem Nabelschnurblut stammende, ex-vivo expandierte hämatopoetische CD133+-Zellen / aus allogenem Nabelschnurblut stammende, nicht expandierte hämatopoetische CD133-Zellen	Behandlung der akuten myeloischen Leukämie
Greek	Αλλογενή αιμοποιητικά κύτταρα CD133+ προερχόμενα από αίμα ομφάλιου λώρου, ex vivo πολλαπλασιασμένα, / αλλογενή αιμοποιητικά κύτταρα CD133- προερχόμενα από αίμα ομφάλιου λώρου, μη πολλαπλασισμένα	Θεραπεία της οξείας μυελοειδούς λευχαιμίας
Hungarian	Köldökzsinórvérből származó ex vivo expandált allogenikus hematopoetikus CD133+ sejtek / köldökzsinórvérből származó nem expandált allogenikus hematopoetikus CD133- sejtek	Akut myeloid leukaemia kezelése
Italian	Cellule allogeniche ematopoietiche CD133+, espanse ex vivo, derivate dal sangue da cordone ombelicale / cellule allogeniche ematopoietiche CD133-, non espanse, derivate dal sangue da cordone ombelicale	Trattamento della leucemia mieloide acuta
Latvian	Allogēnas, no nabas saites asinīm iegūtas, ex vivo pavairotas hematopoētiskās CD133+ šūnas / allogēnas, no nabas saites asinīm iegūtas, nepavairotas hematopoētiskās CD133- šūnas	Akūtas mieloleikozes ārstēšana
Lithuanian	Alogeninės, iš virkštelės kraujo išskirtos, *ex vivo* padaugintos hematopoetinės CD133+ ląstelės/alogeninės, iš virkštelės kraujo išskirtos, nepadaugintos hematopoetinės CD133- ląstelės	Ūmios mieloleukozės gydymas
Maltese	Ċelluli CD133+ ematopojetiċi alloġeneiċi imnissla mid-demm tal-kurdun umbilikali u mwassa' ex vivo / Ċelluli CD133- ematopojetiċi alloġeneiċi imnissla mid-demm tal-kurdun umbilikali u mwassa' ex vivo	Kura tal-lewkimja mjelojda akuta
Polish	Allogeniczne komórki krwiotwórcze CD133+ uzyskane z krwi pępowinowej namnożone ex vivo, / allogeniczne komórki krwiotwórcze CD133- uzyskane z krwi pępowinowej nienamnożone,	Leczenie ostrej białaczki szpikowej
Portuguese	Células CD133+ hematopoiéticas expandidas *ex vivo*, derivadas de sangue alogénico do cordão umbilical / células CD133- hematopoiéticas não expandidas, derivadas de sangue alogénico do cordão umbilical	Tratamento da leucémia mielóide aguda
Romanian	Celule hematopoietice CD133+ alogene, expandate ex vivo, din sânge de cordon ombilical / celule hematopoietice CD133- alogene, ne-expandate, din sânge de cordon ombilical	Tratamentul leucemiei mieloide acute

Language	Active ingredient	Indication
Slovak	Hematopoetické CD133+ bunky získané z alogénnej pupočníkovej krvi, expandované mimo živého organizmu / neexpandované hematopoetické CD133- bunky získané z alogénnej pupočníkovej krvi	Liečba akútnej myeloickej leukémie
Slovenian	Alogenske krvotvorne CD133+ celice, pridobljene iz popkovnične krvi, ekspandirane ex vivo / alogenske krvotvorne CD133- celice, pridobljene iz popkovnične krvi, ne ekspandirane	Zdravljenje akutne mieloične levkemije
Spanish	Células hematopoyéticas alogénicas derivadas de la sangre del cordón umbilical, expandidas ex vivo, con expresión de CD133 / células hematopoyéticas alogénicas derivadas de la sangre del cordón umbilical, no expandidas, sin expresión de CD133	Tratamiento de la leucemia mieloide aguda
Swedish	Allogena navelsträngsblodbaserade, ex vivo-expanderade hematopoetiska CD133+ celler / allogena navelsträngsblodbaserade, icke-expanderade hematopoetiska CD133- celler	Behandling av akut myeloisk leukemi
Norwegian	Allogent navlestrengsblod ex vivo-ekspanderte hematopoietiske CD133+ celler / allogent navlestrengsblod, ikke-ekspanderte hematopoietiske CD133- celler	Behandling av akutt myelogen leukemi
Icelandic	Ósamgena naflastrengs, blóðafleiddar, *ex vivo* fjölgað blóðmyndandi CD133+ frumur / ósamgena naflastrengsblóðs, afleiddar, ófjölgaðar blóðmyndandi CD133-frumur	Meðferð við bráðu kyrningahvítblæði