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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Allogeneic aortic endothelial cells cultured in a porcine gelatin matrix for the prevention of arteriovenous access failure in haemodialysis patients

On 23 February 2011, orphan designation (EU/3/10/843) was granted by the European Commission to Gregory Fryer Associates Ltd, United Kingdom, for allogeneic aortic endothelial cells cultured in a porcine gelatin matrix for the prevention of arteriovenous access failure in haemodialysis patients.

The sponsorship was transferred to Shire Pharmaceuticals Ireland Limited, Ireland, in December 2012.

What is arteriovenous access failure in haemodialysis patients?

Arteriovenous access failure occurs when blood vessels that are used for haemodialysis become blocked. This can happen because of the formation of blood clots and inflammation.

Haemodialysis is a technique used to clear waste products (such as urea) from the blood of patients whose kidneys are not working, since their kidneys are not able to perform this function. Patients undergoing haemodialysis must have two needles inserted into their blood vessels during the procedure, one to draw the blood out, and one to return it. This is generally done into a blood vessel in the arm that has been specially prepared beforehand to provide a good blood flow. If this blood vessel closes as a result of arteriovenous access failure, haemodialysis cannot be carried out effectively.

Arteriovenous access failure is a life-threatening condition because it makes the dialysis less effective and can lead to further damage to the kidneys.

What is the estimated number of patients at risk of developing the condition?

At the time of designation, the number of haemodialysis patients at risk of arteriovenous access failure was estimated to be approximately 1.3 people in 10,000 per year in the European Union (EU). This was equivalent to a total of around 66,000 people per year*, which was considered to be below the

*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 27), Norway, Iceland and Liechtenstein.
At the time of designation, this represented a population of 507,700,000 (Eurostat 2011).

7 Westferry Circus ● Canary Wharf ● London E14 4HB ● United Kingdom
Telephone +44 (0)20 7418 8400 **Facsimile** +44 (0)20 7523 7040
E-mail info@ema.europa.eu **Website** www.ema.europa.eu

ceiling for orphan designation. 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, there were no satisfactory methods authorised in the EU for the prevention of arteriovenous access failure in haemodialysis patients.

How is this medicine expected to work?

This medicine is an advanced therapy that belongs to the group called 'somatic cell therapy products'. These are medicines that contain cells or tissues that have been manipulated to change their biological characteristics so that they can be used to cure, diagnose or prevent a disease.

The medicine is made up of cells from the lining of the aorta (the large blood vessel that carries blood out of the heart) that have been grown in a laboratory and then attached to a spongy matrix. It is intended to be used as a cell transplant.

In the prevention of arteriovenous access failure in haemodialysis patients, the medicine is expected to be applied to the surface of the blood vessels that are to be used for haemodialysis. The matrix is then expected to dissolve and release the aortic cells to be incorporated into the lining of the blood vessel. This is expected to make the lining less likely to become damaged or blocked, and unable to be used for haemodialysis.

What is the stage of development of this medicine?

The effects of allogeneic aortic endothelial cells cultured in a porcine gelatin matrix have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with the medicine in haemodialysis patients at risk of arteriovenous access failure had finished and additional studies were planned.

At the time of submission, the medicine was not authorised anywhere in the EU for the prevention of arteriovenous access failure in haemodialysis patients. Orphan designation had been granted in the United States of America for the prevention of arteriovenous fistula or arteriovenous graft failure in patients with end-stage renal disease receiving haemodialysis or preparing for haemodialysis.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 8 December 2010 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:

Shire Pharmaceutical Ireland Limited
5 Riverwalk
Citywest Business Campus
Dublin 24
Ireland
Telephone: +353 1 429 77 00
Telefax: +353 1 429 77 01

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 aortic endothelial cells cultured in a porcine gelatin matrix	Prevention of arteriovenous access failure in haemodialysis patients
Bulgarian	Алогенни клетки от аортен ендотел, култивирани в свински желатинов матрикс	Предотвратяване нарушаването на артериовенозния достъп при пациенти на хемодиализа
Czech	Alogenní aortální endoteliální buňky kultivované na matrix z prasečí želatiny	Prevence selhání arteriovenózního přístupu u pacientů na hemodialýze
Danish	Allogene aortiske endotelceller kultiveret i en svinegelatinematrix	Forebyggelse af arteriovenøst adgangssvigt hos hæmodialysepatienter
Dutch	Allogene aorta-endotheelcellen gecultiveerd in een voedingsbodem van varkensgelatine	Preventie van het falen van de arterioveneuze toegang bij hemodialysepatiënten
Estonian	Sea želatiini maatriksis kasvatatud allogeensed aordi endoteeli rakud.	Arteriovenoosse juurdepääsu nurjumise vältimiseks hemodialüüsi saavatel patsientidel.
Finnish	Siasta peräisin olevassa liivatematriksissa viljellyt aortan allogeeniset endoteelisolut	Arteriovenoosin veritien epäonnistumisen ehkäisy hemodialyysipotilailla
French	Cellules endothéliales aortiques allogéniques cultivées dans une matrice de gélatine porcine	Prévention de l'échec de l'accès artério-veineux chez les patients sous hémodialyse
German	In einer porcinen Gelatine-Matrix kultivierte, allogene Endothelzellen aus der Aorta	Prävention der Insuffizienz eines arteriovenösen Zugangs bei Hämodialysepatienten
Greek	Αλλογενή αορτικά ενδοθηλιακά κύτταρα που έχουν καλλιεργηθεί σε μήτρα ζελατίνης χοίρου	Πρόληψη αποτυχίας αρτηριοφλεβικής προσπέλασης σε αιμοκαθαιρόμενους ασθενείς
Hungarian	Sertés zselatinmátrixban tenyésztett allogén aorta-endotélsejtek	Az arteriovenózus hozzáférés sikertelenségének megelőzése hemodializált betegekben
Italian	Cellule endoteliali aortiche allogeniche coltivate in una matrice di gelatina suina	Prevenzione del fallimento di accesso artero-venoso in pazienti in emodialisi
Latvian	Alogēnās aortas endotēlija šūnas, kas kultivētas cūkas želatīna matricā	Arteriovenozās fistulas efektīvas funkcionēšanas profilakse hemodialīzes pacientiem
Lithuanian	Alogeninės aortos endotelio ląstelės, augintos kiaulių želatinos matrikse	Arterioveninio praeinamumo sutrikimo prevencija hemodializuojamiems pacientams
Maltese	Ċelluli endoteljali aortiċi alloġeniċi imkabbra f'koltura f'matriċi ta' ġelatina tal-qżieqeż	Prevenzjoni ta' nuqqas ta' aċċess arterjovenuż f'pazjenti li qegħdin fuq l-emodijaiżi

[1] At the time of designation

Language	Active ingredient	Indication
Polish	Alogeniczne komórki śródbłonka aorty wyhodowane na żelatynie wieprzowej	Zapobieganie niewydolności dostępu tętniczo-żylnego u pacjentów hemodializowanych
Portuguese	Células endoteliais aórticas alógenas cultivadas em matriz de gelatina suína	Prevenção da falência do acesso arteriovenoso em doentes em hemodiálise
Romanian	Celule endoteliale aortice alogene cultivate pe matrice gelatinoasă porcină	Prevenţia blocării fistulei arteriovenoase la pacienţii hemodializaţi
Slovak	Alogénne endoteliálne bunky aorty kultivované na matrixe z prasacej želatíny	Prevencia zlyhania arteriovenózneho prístupu u pacientov na hemodialýze
Slovenian	Alogene aortne endotelijske celice, vzgojene v matrici iz prašičje želatine	Preprečevanje odpovedi arteriovenskega pristopa pri hemodializnih pacientih
Spanish	Células endoteliales aórticas alogénicas cultivadas en una matriz de gelatina porcina	Prevención del fallo del acceso arteriovenoso en los pacientes en hemodiálisis
Swedish	Allogena endotelceller från aorta odlade i en svinbaserad gelatinmatrix	Förebyggande av arteriovenös kärlaccess-svikt hos hemodialyspatienter
Norwegian	Allogene endotelceller fra aorta dyrket i en gelatinmatriks fra gris	Forebygging svikt i arteriovenøs tilgang hos hemodialysepasienter
Icelandic	Ósamgena ósæðarþelsfrumur ræktaðar í grísa gelatínuppistöðuefni	Forvörn gegn því að slag- og bláæðaraðgengi bregðist hjá blóðskilunarsjúklingum