The feasibility and efficacy of subcutaneous Plerixafor for mobilization of peripheral blood stem cells in allogeneic HLA*identical sibling donors: a prospective phase II study.

Published: 14-04-2011
Last updated: 27-04-2024

Primary objectiveTo determine the feasibility of plerixafor 320 *g/kg subcutaneously to harvest a sufficient number of CD34+ peripheral blood stem cells/kg recipient body weight. Feasibilty is defined as a minimum of 2.0x10^6/kg CD34+ cells in one...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON41565

Source
ToetsingOnline

Brief title
HOVON 107 MOBILIZATION

Condition

- Other condition
- Leukaemias

Synonym
Cancer

Health condition

stamcel mobilisatie bij donoren

Research involving
Human

Sponsors and support

Primary sponsor: HOVON
Source(s) of monetary or material Support: HOVON,sanofi

Intervention

Keyword: donor, plerixafor, stem cell mobilization

Outcome measures

Primary outcome

Percentage of donors with a successful harvest (*2.0x106 CD34+ cells /kg).

Secondary outcome

For donors:

1. The absolute number of CD34+ cells collected per litre processed volume.

2. The time required to collect 2.0x10^6CD34+ cells/kg, also in relation to the

time of administration of plerixafor.

3. The number of CD34+ cells in the peripheral blood at regular intervals after

the administration of plerixafor.

4. The number of CD34+ cells in the peripheral blood as well as in the

apheresis product at regular intervals during the stem cell apheresis.

5. The phenotype of CD34+ cells and hematopoietic progenitor cells including

its subpopulations, dendritic cells as well as regulatory T-cells in the graft.

6. The incidence and CTCAE grade (1-4) of adverse events.

For patients:

1. incidence of engraftment at days 30, 60 and 90 after transplantation with

plerixafor mobilized HPCs.

2. time to hematopoietic reconstitution.

3. hematopoietic chimerism in blood, CD3 isolated cells at days 30, 60, 90

after transplantation and in bone marrow at day 90 after transplantation.

4. incidence and grade of GVHD..

Study description

Background summary

The 4-5 days administration of G-CSFsubcutaneously twice daily for mobilization of allogeneic hematopoietic progenitor cells (HPCs) nowadays is standard but accompanied by several grade 2 and 3 side effects in about 70% of the allogeneic donors. Preliminary studies showed that a single subcutaneous injection of plerixafor a CXCR4/SDF1 antagonist results in direct release of HPCs with limited toxicities. Patients engrafted with allogeneic HPCs that were collected after plerixafor mobilization showed rapid and complete engraftment. Also plerixafor seems to mobilize a more primitive stem cell subset that might result in better engraftment in comparison to G-CSF. The peak level of CD34+ cells after plerixafor subcutaneously is seen after 8-9 hours. The proposed prospective phase II study intends to evaluate subcutaneous plerixafor 320 *g/kg to mobilize HPCs from healthy HLA-matched adult sibling donors.

Study objective

Primary objective
To determine the feasibility of plerixafor 320 *g/kg subcutaneously to harvest a sufficient number of CD34+ peripheral blood stem cells/kg recipient body weight.
Feasibilty is defined as a minimum of 2.0x10^6/kg CD34+ cells in one or two phereses in at least 90% of the donors

Study design

The study will be performed as a prospective phase II study

Intervention

Donors will receive plerixafor 320 *g/kg subcutaneously

Patients will be transplanted with the stem cells harvested with plerixafor according to standard practice

Study burden and risks

Instead of 4-5 days administration of G-CSF subcutaneously twice daily, donors will receive a single injection of plerixafor subcutaneously 9 hours before the planned stem cell collection. In case less than 2.0 x 10^6 CD34+ cells/kg are collected the procedure can be repeated the following day. Before and during the stem cell collection extra blood samples will be drawn. After the procedure donors will have to make 3 visits to the hospital the first year and 1 in the second year.
Plerixafor seems safe in a large number of patients and a limited number of healthy volunteers. Side effects are in general no more than grade 2 and consist mainly of lightheadeiness, nausea, flatulence, injection site discomfort.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Donors
* HLA identical sibling donor
* Age 18-60 years inclusive
* Hematologic parameters within normal limits
* Capable of undergoing leucapheresis: adequate venous access. Must be willing to undergo insertion of a central catheter should leucapheresis via peripheral vein be inadequate
* Willing and able to have bone marrow aspiration if there is mobilization failure
* Negative pregnancy test at study entry for women of childbearing potential
* Willing and able to use adequate contraception during the mobilization period and up to 3 months after last dose of plerixafor
* Written informed consent from donor ;Patients
* Age 18-65 years inclusive
* In general, indication for allogeneic stem cell transplant will be determined by each participating center according to local criteria.
* Patients with a cytopathologically confirmed diagnosis of:
- De novo Acute Myeloid Leukemia according to WHO classification in first complete remission (excluding acute promyelocytic leukemia)
*- Therapy related AML/RAEB in first complete remission
*- Myelodysplasia RA(RS)/RCMD with IPSS * 1.5
- Myelodysplasia refractory anemia with excess of blasts (RAEB) with IPSS * 1.5 in first complete remission
* Biphenotypic leukemia in first complete remission OR
- De novo B or T Lineage Acute Lymphatic Leukemia in first complete remission.
* Multiple myeloma, not included in other transplant study
* Hodgkin Lymphoma
* Non-Hodgkin lymphoma
* Chronic lymfocytic leukemia
* Chronic myeloid leukemia;* WHO performance score 0,1 or 2
* Patients should have an HLA- identical sibling donor
* Life expectancy >3 months
* Negative pregnancy test at study entry for women of childbearing potential
* Willing and able to use adequate contraception
* Written informed consent from patient

Exclusion criteria

Donors
* Monozygotic twin

* Unstable hypertension requiring more than 1 medication.
* Positive serology for hepatitis C or HbsAg
* Treatment with other investigational drugs
* HIV positivity
* Pregnant or breastfeeding female subject;Patients
* Cardiac dysfunction
* Severe pulmonary dysfunction (CTCAE grade 3-4)
* Severe neurological or psychiatric disease
* Significant hepatic dysfunction
* Significant renal dysfunction
* Concurrent severe and/or uncontrolled medical condition (e.g. uncontrolled diabetes, infection, hypertension, cancer, etc.)
* Patient known to be HIV-positive
* Pregnant or breast-feeding female patients.
* Presence of other active non-hematological malignancy

Study design

Design

Study phase:	2
Study type:	Interventional
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	13-09-2011
Enrollment:	50
Type:	Actual

Medical products/devices used

Product type:	Medicine
Generic name:	Somatic cels allogenic
Product type:	Medicine

Brand name:	Mozobil
Generic name:	plerixafor
Registration:	Yes - NL outside intended use

Ethics review

Approved WMO Date:	14-04-2011
Application type:	First submission
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	31-05-2011
Application type:	First submission
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	08-03-2012
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	03-04-2012
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	17-04-2012
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	10-10-2013
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO	

Date:	22-10-2013
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	06-06-2014
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	01-07-2014
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	15-12-2014
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	17-04-2015
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	01-06-2015
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	25-08-2015
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
EudraCT	EUCTR2010-023436-16-NL
CCMO	NL34799.000.11

Study results

Results posted: 24-06-2020

First publication
17-06-2020