Vaccination of Multiple Myeloma patients with RNA electroporated mature dendritic cells expressing multiple tumor antigens.

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The primary goal is to show the capability of monocyte-derived DC after RNA electroporation for multiple antigens to induce an immune response. The secondary objective is to show clinical response.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Plasma cell neoplasms
Study type	Interventional

Summary

ID

NL-OMON34526

Source
ToetsingOnline

Brief title
RNA-DC vaccination in multiple myeloma

Condition

- Plasma cell neoplasms

Synonym
Kahler disease, Multiple myeloma

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud

Source(s) of monetary or material Support: KWF en Stichting Nijmeegs Offensief Tegen Kanker

Intervention

Keyword: DC vaccination, Immune therapy, minimal residual disease, multiple myeloma

Outcome measures

Primary outcome

In vivo immune response to the tumor associated antigen epitopes in at least 3

out of 10 patients will be considered as a positive result. No response to any

of the antigens will be considered a negative result.

Secondary outcome

Secondary end-points are clinical responses a decrease of minimal residual

disease by molecular monitoring (ASO-PCR).

Study description

Background summary

Patients with multiple myeloma (MM) are treated with intensive chemotherapy, which frequently induces a status of minimal residual disease, but finally all patients will relapse. Allogeneic transplantation as a form of immunotherapy may prolong remission and even cures the disease, but only in a minority of the patients and with significant toxicity. In a pilot study we vaccinated MM patients with mature DC loaded with idiotype as an alternative form of immunotherapy. We showed the feasibility and a very limited toxicity, but the idiotype antigen appeared only weakly immunogenic. In this study we will vaccinate with 3 different proteins, Mage-3, Survivin and BCMA, all shown to be highly expressed on malignant plasma cells. Autologous RNA electroporated mature DC will be used to present the antigens to the immune system.

Study objective

The primary goal is to show the capability of monocyte-derived DC after RNA electroporation for multiple antigens to induce an immune response. The

secondary objective is to show clinical response.

Study design

This is an observational study in a series of 10 patients. Patients will be treated by 3 DC vaccinations at 2 weeks interval. In case of response the procedure can be repeated to boost the immune response.

Intervention

Patients monocytes will collected by apheresis. Patients will be vaccinated intravenous and intradermal at 3 occasions with 2 weeks interval. Monitoring will be done for toxicity, immune response and minimal residual disease.

Study burden and risks

In a pilot study and studies with DC vaccination in other malignancies (> 80 patients treated) the toxicity was limited to local reactions at the site of injection, allergic reactions, fever or chills. Apheresis is a safe procedure, already performed before in these patients to collect stem cells for autologous transplantation. For follow-up we will collect blood (at day 14, 28, 39 and 56 after DC vaccination) and bone marrow aspirates (at 3, 6, 12 months after chemotherapy during 1st year).

Contacts

Public
Universitair Medisch Centrum Sint Radboud

Geert Grooteplein zuid 10
6525 GA
NL
Scientific
Universitair Medisch Centrum Sint Radboud

Geert Grooteplein zuid 10
6525 GA
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

· Age 18-70 years
· Patients with stage II and III MM
· Complete remission (CR) or partial response (PR) following intensive therapy, including high dose melphalan and autologous stem cell transplantation
· Measurable minimal residual disease by M-component (complete of light chain) or molecular disease by BM ig heavy chain rearrangement (ASO-PCR)
·Myeloma cells expressing 2-3 of the 3 TAA used for vaccination, each in >20% of CD138+CD38++ plasma cells
· Interval of >6 months after completion of intensive chemotherapy.
· Life expectancy >6 months
· Expected adequacy for follow-up including bone marrow evaluation
· Written Informed consent

Exclusion criteria

· Progressive disease (increase in M-component of >25% in the last 3 months)
· Patients on immunosuppressive drugs
· Patients with active infections (viral, bacterial or fungal) that requires specific therapy. Acute therapy must have been completed within 14 days prior to study treatment.
· Patients with known allergy to shell fish (contains KLH).
· Patients with pregnancy or lactation
· WHO performance status 4
· Allogeneic stem cell transplantation

Study design

Design

Study type: Interventional

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	30-10-2007
Enrollment:	12
Type:	Actual

Medical products/devices used

Product type:	Medicine
Generic name:	Somatic cells autologous

Ethics review

Approved WMO Date:	04-09-2006
Application type:	First submission
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	01-08-2007
Application type:	First submission
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	20-03-2008
Application type:	Amendment
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	25-11-2009

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	EUCTR2006-003492-12-NL
CCMO	NL13547.000.06