Differences in gene expression profiles in blood versus lymph nodes and bone marrow from patients with Chronic Lymphocytic Leukemia.

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To identify the differences in gene expression profiles of leukemic cells in lymph nodes and bone marrow versus peripheral blood in patients with chronic lymphocytic leukemia. Thereby investigating which differences are important in the resistance...

Ethical review	Approved WMO
Status	Pending
Health condition type	Leukaemias
Study type	Observational non invasive

Summary

ID

NL-OMON31789

Source
ToetsingOnline

Brief title
Gene expression profiles in blood, lymph nodes and bone marrow in CLL.

Condition

- Leukaemias

Synonym
Chronic Lymphocytic Leukemia, white blood cell cancer

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum

Source(s) of monetary or material Support: KWF beurs

Intervention

Keyword: B-CLL, bone marrow, gene expression, lymph node

Outcome measures

Primary outcome

Differences in gene expression profiles of lymph node and bone marrow versus peripheral blood in patients with chronic lymfocytic leukemia.

Secondary outcome

Which regulatory pathways and transcription factors are important in the observed differences in gene expression?

Is it possible to develop a new targeted therapy based on the differences in expression of certain genes in lymph nodes and bone marrow versus peripheral blood?

Study description

Background summary

Chronic Lymphocytic Leukemia is the most common adult leukemia in the Western world. Until now there is no curative therapy; only complete remission for a short period can be accomplished. There is no explanation for the resistance to therapy at this moment. Our hypothesis is that the leukemic white blood cells are sensitive for therapy, but the leukemic cells in the bone marrow and lymph nodes are therapy resistant. In many types of cancer there is an error in the programmed cell death, a process also known as apoptosis. This process is regulated by pro- apoptotic and anti- apoptotic proteins. One important pro-apoptotic protein is Noxa. Previously, we have shown that in a multiplex PCR (MLPA) in lymph nodes of CLL patients there is lower expression of Noxa compared to leukemic cells in peripheral blood. We suggest this could be an explanation for therapy resistance (in the lymph nodes). By MLPA we investigated 35 different genes that are important in apoptosis, but there are many other genes that play an important role in CLL. In our current study, we

want to generate gene expression profiles, by c-DNA micro array, to identify the differences between the leukemic cells in the lymph nodes and bone marrow versus peripheral blood. Thus, we hope to identify the genes that are important in the resistance for therapy.

Study objective

To identify the differences in gene expression profiles of leukemic cells in lymph nodes and bone marrow versus peripheral blood in patients with chronic lymphocytic leukemia. Thereby investigating which differences are important in the resistance for therapy and, potentially, in the development of novel therapeutic regimes.

Study design

In this study CLL patients are eligible who are planned for a diagnostic lymph node extirpation or bone marrow biopsy. During the bone marrow biopsy some extra bone marrow fluid will be aspirated and during the lymph node extirpation some extra tissue will obtained. On the same day a blood withdrawal of 35 ml will be performed. Patients do not qualify for compensation.

Study burden and risks

The lymph node extirpation and bone marrow biopsy are planned for a diagnostic purpose. During the bone marrow biopsy 5 ml extra bone marrow fluid will be aspirated and during the lymph node extirpation some extra tissue will be removed. This will not prolong the intervention. On the same day there will be a blood withdrawal. This can cause some inconvenience and a small haematoma. The objective of the study is to identify the differences in gene expression in lymph node and bone marrow versus peripheral blood and thereby investigate which differences are important in the resistance for therapy and develop a new targeted therapy. Thus, there will be no direct benefit for the individual patients; however we hope that other (future) patients will benefit from the knowledge obtained in the current study.

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

B-CLL patients with the minimum age of 18.
B-CLL patients who are able to give informed consent.
B-CLL patients who undergo lymph node excision or bone marrow biopsy for diagnostic reasons

Exclusion criteria

Patients with other hematological malignancies
B-CLL patients younger than 18.
B-CLL patients who are unable to give informed consent

Study design

Design

Study type: Observational non invasive
Masking: Open (masking not used)

Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-02-2008
Enrollment:	40
Type:	Anticipated

Ethics review

Approved WMO

Application type:	First submission
Review commission:	METC Amsterdam UMC

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
CCMO	NL20714.018.07