Molecular Imaging of Zirconium-89-labeled Brentuximab as a Tool to Investigate brentuximab biodistribution in CD30-positive Lymphoma

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This study has been transitioned to CTIS with ID 2024-511151-18-00 check the CTIS register for the current data. • Determine a feasible 89Zr-brentuximab-PET imaging schedule, to allow assessment of the biodistribution of 89Zr-brentuximab in tumor...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Lymphomas Hodgkin's disease
Study type	Interventional

Summary

ID

NL-OMON51758

Source
ToetsingOnline

Brief title
CD30 Imaging in DLBCL

Condition

- Lymphomas Hodgkin's disease

Synonym
Hodgkin lymphoma

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen

Source(s) of monetary or material Support: Takeda Pharmaceuticals

Intervention

Keyword: Brentuximab, Hogdkin, Imaging

Outcome measures

Primary outcome

• A feasible and optimized 89Zr-brentuximab imaging protocol in patients with CD30+ lymphomas

• Safety profile, pharmacokinetics (PK), and pharmacodynamics (PD) of the tracer 89Zr-brentuximab

• The relationship between 89Zr-brentuximab biodistribution (tumor uptake) and CD30 protein expression (IHC), soluble CD30 measurements (ELISA), as well as CD30 RNA expression (nanostring).

Secondary outcome

• The extent of heterogeneity in 89Zr-brentuximab uptake compared to 18F-FDG-PET and the potential correlation with response to therapy (as determined via 18F-FDG PET/CT per the International Working Group criteria (1,2).

• Drug delivery to tumor lesions through IHC (using anti MMAE mAbs) on biopsies taken during or directly after treatment with brentuximab vedotin and its relationship with 89Zr-brentuximab tracer uptake (in CTCL, MF patients only).

Study description

Background summary

In this imaging study the biodistribution of brentuximab will be investigated by using Zirconium-89 (89Zr)-labeled brentuximab. 89Zr-brentuximab imaging will help to assess tumor uptake and pharmacokinetic and -dynamic properties of brentuximab in patients who are intended to be treated with brentuximab vedotin, either in one of the registered indications (HL, CTCL and sALCL) or as part of the HOVON 136 trial for patients with DLBCL. We hypothesize that the results of this imaging study might be used to facilitate the identification of patients that would benefit most from brentuximab vedotin treatment

Study objective

This study has been transitioned to CTIS with ID 2024-511151-18-00 check the CTIS register for the current data.

• Determine a feasible 89Zr-brentuximab-PET imaging schedule, to allow assessment of the biodistribution of 89Zr-brentuximab in tumor and non-target lesions or -organs.
• Establish safety profile, pharmacokinetics (PK), and pharmacodynamics (PD) of the new tracer 89Zr-brentuximab
Secondary objectives:
• Explore the differences in biodistribution of 89Zr-brentuximab across lymphoma subtypes.
• Compare 89Zr-brentuximab biodistribution (tumor uptake) to computer assisted CD30 scoring on immunohistochemistry (IHC), soluble CD30 measurements (ELISA), and CD30 RNA gene expression.
• Explore the relation between the heterogeneity in 89Zr-brentuximab uptake and 18F-FDG biodistribution as well as response to therapy (as determined via 18F-FDG PET/CT per the International Working Group criteria (1,2);

Study design

Prospective, single center, investigator sponsored trial (IST)

Intervention

nvt

Study burden and risks

We do not expect imaging procedures to interfere with patient extend of the treatment. The participation in the imaging trial will not affect the choice burden and risks of treatment. Patients with a relapsed DBLCL are treated within the associated with HOVON 136 trial, while all other patients are treated according to participation standard of care. Because of the minimal modifications accompanying the labeling process of brentuximab the toxicity profile of 89Zr- brentuximab is expected to be similar to that of

brentuximab. However, 89Zr-brentuximab is unlikely to pose a toxicological threat, because the tracer is administered in a non-therapeutic dose of maximum 50 mg.

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

• All patients with histologically proven CD30-positive (i.e. > 1% cells) lymphomas who will be treated with brentuximab vedotin, including:
o Hodgkin lymphoma
o T-cell lymphoma
o Cutaneous T-cell lymphoma
o DLBCL
• Age >=18

• Signed written informed consent form (approved by the Institutional Review Board [IRB]/ Independent Ethics Committee [IEC]) obtained prior to any study specific screening procedures
• Measurable disease: on CT scan at least 1 lesion/node with a long axis of > 1.5 cm and at least one positive lesion on 18F-FDG PET scan *
• WHO performance status 0-2 (see appendix A) *
• Adequate hepatic function: total bilirubin <= 1.5 times ULN (unless due to lymphoma involvement of the liver or a known history of Gilbert's syndrome as defined by > 80% unconjugated bilirubin) and ALAT/ASAT <= 3 times ULN (unless due to lymphoma involvement of the liver; in that case ALAT/ASAT may be elevated up to 5 times ULN)
• Adequate renal function: GFR > 50 ml/min as estimated by the Cockroft&Gault formula at rehydration:
CrCL = (140-age [in years] x weight [kg] (x 0.85 for females)
(0.815 x serum creatinine [µmol/L]) *
• Adequate bone marrow function: Absolute neutrophil count (ANC) >= 1.5 x 109/L and platelet count >=100 x 109/L, unless caused by diffuse bone marrow infiltration by lymphoma
• Hemoglobin must be >= 8 g/dL (5.0 mmol/L), transfusion is allowed *
• Life expectancy of >3 months with treatment *
• Negative pregnancy test at study entry, if applicable

Exclusion criteria

• Prior allergic reaction or known hypersensitivity to immunoglobulins, recombinant proteins, murine proteins, or to any excipient contained in the dug formulation of brentuximab vedotin
• Peripheral sensory or motor neuropathy grade >= 2 *
• Patients with a serious psychiatric disorder that could, in the investigator's opinion, potentially *interfere with the completion of treatment according to protocol *
• Patients who have any severe and/or uncontrolled medical condition or other conditions that could affect their participation in the study
• Any psychological, familial, sociological and geographical condition potentially hampering compliance with the study protocol and follow-up schedule
• Claustrophobia to the extent that PET-CT is impossible
• Pregnant or lactating women. Documentation of a negative pregnancy test must be available for pre-menopausal women with intact reproductive organs and for women less than two years after menopause

Study design

Design

Study type: Interventional

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	03-06-2024
Enrollment:	20
Type:	Actual

Medical products/devices used

Product type:	Medicine
Brand name:	[89Zr]-N-Suc-Df-brentuximab
Generic name:	[89Zr]-brentuximab
Registration:	Yes - NL intended use
Product type:	Medicine
Brand name:	Adcetris
Generic name:	Brentuximab vedotin
Registration:	Yes - NL intended use

Ethics review

Approved WMO

Date:	01-12-2022
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

Approved WMO

Date:	29-03-2023
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

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
EU-CTR	CTIS2024-511151-18-00
EU-CTR	CTIS2024-511151-18-01
EudraCT	EUCTR2021-005950-27-NL
CCMO	NL80023.042.21