

# 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...

|                              |                             |
|------------------------------|-----------------------------|
| <b>Ethical review</b>        | Approved WMO                |
| <b>Status</b>                | Recruiting                  |
| <b>Health condition type</b> | Lymphomas Hodgkin's disease |
| <b>Study type</b>            | 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 <sup>89</sup>Zr-brentuximab imaging protocol in patients with CD30+ lymphomas
- Safety profile, pharmacokinetics (PK), and pharmacodynamics (PD) of the tracer <sup>89</sup>Zr-brentuximab
- The relationship between <sup>89</sup>Zr-brentuximab biodistribution (tumor uptake) and CD30 protein expression (IHC), soluble CD30 measurements (ELISA), as well as CD30 RNA expression (nanosttring).

### Secondary outcome

- The extent of heterogeneity in <sup>89</sup>Zr-brentuximab uptake compared to <sup>18</sup>F-FDG-PET and the potential correlation with response to therapy (as determined via <sup>18</sup>F-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 <sup>89</sup>Zr-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, <sup>89</sup>Zr-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  $\leq$  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  $\leq$  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 Cockcroft&Gault formula at rehydration:  

$$\text{CrCL} = (140 - \text{age [in years]} \times \text{weight [kg]} \times 0.85 \text{ for females}) / (0.815 \times \text{serum creatinine } [\mu\text{mol/L}]) *$$
- Adequate bone marrow function: Absolute neutrophil count (ANC)  $\geq 1.5 \times 10^9/\text{L}$  and platelet count  $\geq 100 \times 10^9/\text{L}$ , unless caused by diffuse bone marrow infiltration by lymphoma
- Hemoglobin must be  $\geq 8 \text{ g/dL}$  (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 drug formulation of brentuximab vedotin
- Peripheral sensory or motor neuropathy grade  $\geq 2$  \*
- 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         |