Improving brain penetration of radiolabeled TKI PET tracers through blood brain barrier transporter inhibition

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON25665

Source
NTR

Brief title
M14EEP

Health condition

Cancer
Brain metastases
Tyrosinse Kinase Inhibitors
Drug Transporters

Sponsors and support

Primary sponsor: Netherlands Cancer Institute - Antoni van Leeuwenhoek
Source(s) of monetary or material Support: Startgeld, Netherlands Cancer Institute - Antoni van Leeuwenhoek

Intervention

Outcome measures

Primary outcome

Improved CNS penetration of 11C erlotinib after PGP/BCRP inhibitor administration.

Secondary outcome

NA

Study description

Background summary

The primary objective of this study is to obtain clinical proof of principle that the addition of a PgP/BCRP inhibitor
increases CNS concentrations of tyrosine kinase inhibitors by inhibition of drug efflux transporter function in the blood
brain barrier.

Every patient will undergo two PET scans. For both scans an intravenous bolus of [11C]erlotinib will be administered. For
the second scan patients will be instructed to take 1000 mg of a PGP/BCRP inhibitor orally. This will enable us to measure the uptake of [11C]erlotinib in the brain with and without PgP/BCRP inhibition.

Study objective

The primary objective of this study is to obtain clinical proof of principle that the Addition of a PgP/BCRP inhibitor
increases CNS concentrations of tyrosine kinase inhibitors by inhibition of drug efflux transporter function in the blood
brain barrier

Study design

11C-erlotnib PET scan on 2 successive days.

Follow up visit 7+-2 days afterwards.

Intervention

- 2 11C-erlotinib PET scans. 1 with administration of a PGP/BCRP inhibitor and 1 without.

- 1 MRI of the brain.

Contacts

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Eligibility criteria

Inclusion criteria

The study population consists of cancer patients with advanced or metastatic solid tumors for whom no standard
therapy is available or for whom a TKI which is a PgP/BCRP substrate is a standard therapeutic option (erlotinib,
sunitinib, imatinib, gefitinib, sorafenib, lapatinib, crizotinib, vemurafenib).

Exclusion criteria

- Known brain metastases;

- Patients who have had previous treatment with central nervous system irradiation;

- Treatment with the tyrosine kinase inhibitor used as TKI PET tracer within three half lives before the PET scans;

- Patients with known alcoholism, drug addiction and/or psychiatric of physiological condition which in the opinion of
the investigator would impair study compliance;

- Patients are not allowed to use co-medication with PgP or BCRP modulators (including OTC medication)

- Patients are also not allowed to use co-medication which are PgP or BCRP substrates as this may lead to increased toxicity.

- Known hypersensitivity to erlotinib, elacridar or any excipients used in the formulation of either IMPs.

- Known contra-indications for a MRI scan.

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	20-03-2014
Enrollment:	8
Type:	Actual

Ethics review

Positive opinion

Date:	10-09-2014
Application type:	First submission

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
NTR-new	NL4629
NTR-old	NTR4780
Other	M14EEP : 2014-000281-21

Study results