Therapeutic Drug Monitoring of Tyrosine Kinase Inhibitors

Published: 18-12-2008
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Primary: To determine the pharmacokinetics of several clinically used targeted anti-cancer agents.Secondary: To examine the relationship between treatment response/toxicity and plasma (or intracellular) drug levels.To evaluate the specific influence...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Miscellaneous and site unspecified neoplasms malignant and unspecified
Study type	Observational invasive

Summary

ID

NL-OMON53128

Source
ToetsingOnline

Brief title
NIB cohort study

Condition

- Miscellaneous and site unspecified neoplasms malignant and unspecified

Synonym
cancer, malignancies

Research involving
Human

Sponsors and support

Primary sponsor: Antoni van Leeuwenhoek Ziekenhuis
Source(s) of monetary or material Support: NKI-AVL

Intervention

Keyword: Pharmacokinetics, Targeted anti-cancer agents, TDM, Tyrosine kinase inhibitors

Outcome measures

Primary outcome

•Pharmacokinetics

Secondary outcome

•Treatment outcome (response, suboptimal response, treatment failure)

•Toxicity (graded on basis of the National Cancer Institute Common Toxicity

Terminology grading Criteria for adverse events (CTCAE)

•Genotype of drug metabolising enzymes and drug transporters

•Mutations and/or alterations in drug targets

•Drug-drug interactions

Study description

Background summary

Interpatient (and intrapatient) variability in pharmacokinetics may be a major determinant in targeted anticancer therapy outcome since this may lead to unpredictable efficacy and safety. In case of imatinib, there is already emerging evidence for a relationship between plasma levels and clinical efficacy/occurrence of side effects. Knowledge of this PK-PD relationship can be used to optimize therapy in order to prevent failure of targeted anti-cancer agents by monitoring of drug resistance and reducing drug toxicity. Since the burden of therapy is severe and targeted anti-cancer therapy is very expensive (> ¤ 2000 / month) monitoring of plasma drug levels in order to optimise therapy is likely to be cost effective. Since all targeted anti-cancer agents have large similarities in mechanism of action and target proteins within their drug class, similar PK-PD relations are to be expected for all targeted anti-cancer agents within these drug classes. This underlines the rationale for a structured prospective follow up of patients using any targeted anti-cancer agent.

Study objective

Primary:
To determine the pharmacokinetics of several clinically used targeted anti-cancer agents.

Secondary:
To examine the relationship between treatment response/toxicity and plasma (or intracellular) drug levels.
To evaluate the specific influence of different parameters on variability in pharmacokinetics and -dynamics

Study design

A longitudinal follow up cohort study of all patients using a targeted anti-cancer agent for treatment of cancer.

Study burden and risks

The sampling scheme of the NIB-cohort study will be minimally invasive. In the NIB-cohort all sampling is carried out during routine follow up for targeted anti-cancer therapy and does not require additional vena punctures. The benefit for the participating patients exists of individual treatment optimisation by routinely applied TDM using the knowledge concerning PK-PD relations of targeted anti-cancer agents acquired from the NIB-cohort 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

Patients using a (currently approved or new) targeted anti-cancer agent for treatment of cancer
Patients from whom it is possible to collect blood samples
Informed consent is given

Exclusion criteria

nvt

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	18-06-2009

Enrollment:	1500
Type:	Actual

Ethics review

Approved WMO Date:	18-12-2008
Application type:	First submission
Review commission:	METC NedMec
Approved WMO Date:	31-05-2010
Application type:	Amendment
Review commission:	METC NedMec
Approved WMO Date:	21-06-2012
Application type:	Amendment
Review commission:	METC NedMec
Approved WMO Date:	10-07-2012
Application type:	Amendment
Review commission:	METC NedMec
Approved WMO Date:	25-11-2013
Application type:	Amendment
Review commission:	METC NedMec
Approved WMO Date:	17-09-2014
Application type:	Amendment
Review commission:	METC NedMec
Approved WMO Date:	07-06-2022
Application type:	Amendment
Review commission:	METC NedMec
Approved WMO Date:	28-02-2024
Application type:	Amendment

Review commission: METC NedMec

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	NL26128.048.08