# Feasibility ex vivo Homologous Recombination Deficiency (HRD) test in advanced breast cancer disease

Published: 08-08-2014
Last updated: 21-04-2024

The primary objective of this study is determining the feasibility of the ex vivo HRD test in metastatic lesions of different sites among breast cancer patients who will start treatment with chemotherapy. The sites of metastatic lesions that will be...

| | |
|---|---|
| **Ethical review** | Approved WMO |
| **Status** | Recruitment stopped |
| **Health condition type** | Breast neoplasms malignant and unspecified (incl nipple) |
| **Study type** | Observational invasive |

## Summary

### ID

NL-OMON42167

**Source**
ToetsingOnline

**Brief title**
HRD test breast cancer

### Condition

- Breast neoplasms malignant and unspecified (incl nipple)

**Synonym**
breast carcinoma

**Research involving**
Human

### Sponsors and support

**Primary sponsor:** Erasmus MC, Universitair Medisch Centrum Rotterdam
**Source(s) of monetary or material Support:** Ministerie van OC&W

## Intervention

**Keyword:** breast cancer, chemotherapy, homologous recombination, predictive test

## Outcome measures

### Primary outcome

The ability of ex vivo assay for RAD51 IRIF formation (as a measure of homologous recombination deficiency (HRD)) in metastatic breast cancer lesions of different sites among advanced breast cancer patients before start of treatment with chemotherapy. The sites of metastatic lesions that will be investigated are: liver, lymph nodes, and subcutaneous lesions. For each localization, biopsies from at least 3 different patients will be collected.

### Secondary outcome

-

# Study description

### Background summary

Defective homologous recombination DNA repair imposed by BRCA1 or BRCA2 gene deficiencies sensitizes cells to double strand break (DSB)-inducing DNA damaging agents like platinum derivates and anthracyclines. The formation of RAD51 IRIF is impaired in BRCA1 or BRCA2 defective cells and also in other genetic defects leading to HR deficiency. In current healthcare these anti-cancer agents e.g. platinum derivates are usually administered at late stage of advanced breast cancer from which only a subpopulation of patients benefit from the treatment. Having a test that can predict whether or not an individual patient could benefit from the treatment will provide the option to provide the treatment at an earlier stage of the disease.

### Study objective

The primary objective of this study is determining the feasibility of the ex vivo HRD test in metastatic lesions of different sites among breast cancer patients who will start treatment with chemotherapy. The sites of metastatic

lesions that will be investigated are: liver, lymph nodes, bone and subcutaneous lesions.
In case feasible, the preclinical predictive value of this test for response to double strand break-inducing DNA damaging agents will be confirmed in a clinical study among breast cancer patients who will be treated with DSB-inducing agents correlating the test results to a clinical response rate to the given treatment. The findings of this pilot study are conditional for setting up such a clinical study.

### Study design

Pilot study

### Study burden and risks

Burden for the patient will be minimal because only easily approachable metastatic lesions will be offered for a biopsy. Bone and lung metastasis will be excluded from this study to avoid risks and side effects. Expected but confined effects will be mild pain and in the worst case a(n extended) bleeding

## Contacts

**Public**
Erasmus MC, Universitair Medisch Centrum Rotterdam

Groene Hilledijk 301
Rotterdam 3075 EA
NL
**Scientific**
Erasmus MC, Universitair Medisch Centrum Rotterdam

Groene Hilledijk 301
Rotterdam 3075 EA
NL

## Trial sites

### Listed location countries

Netherlands

# Eligibility criteria

**Age**
Adults (18-64 years)
Elderly (65 years and older)

## Inclusion criteria

• Breast cancer patients with distant metastases who preferably are planned to receive systemic treatment (e.g. cisplatin, carboplatin, anthracyclins and alkylating agents), alone or in combination with other chemotherapeutic agents.
• The site of the tumor should be amendable for biopsy. NB lung metastases (high risk of hematothorax) and bone metastases (not suitable for ex vivo test because calcifications interfere with experimental procedures) are excluded.
• Age > 18 years
• WHO performance status 0 or 1
• Bilirubin <1.5 ULN and both AST and ALT <2,5x ULN in case a liver biopsy is planned
• Platelets > 100 x 10e9/L
• INR <1.5
• Written informed consent

## Exclusion criteria

• Current therapeutically use of anti-coagulant (coumarin derivates, warfarin, heparin or low molecular weight heparin [LMWH]) whereby a short interruption of drug use is not allowed. LMWH if used for prophylaxis is allowed.
• Any psychological condition potentially hampering compliance with the study protocol

# Study design

## Design

**Study type:** Observational invasive

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

### Recruitment

NL

| | |
|---|---|
| Recruitment status: | Recruitment stopped |
| Start date (anticipated): | 13-02-2015 |
| Enrollment: | 43 |
| Type: | Actual |

## Ethics review

| | |
|---|---|
| Approved WMO Date: | 08-08-2014 |
| Application type: | First submission |
| Review commission: | METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam) |
| Approved WMO Date: | 09-09-2015 |
| Application type: | Amendment |
| Review commission: | METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam) |

## 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 | NL49306.078.14 |