Single-dose preoperative partial breast irradiation in low-risk breast cancer patients

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Ethical review	Approved WMO
Status	Recruiting
Health condition type	Breast neoplasms malignant and unspecified (incl nipple)
Study type	Interventional

Summary

ID

NL-OMON54083

Source
ToetsingOnline

Brief title
ABLATIVE-2

Condition

- Breast neoplasms malignant and unspecified (incl nipple)

Synonym
breast cancer, breast carcinoma

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: KWF

Intervention

Keyword: Breast cancer, Pre-operative, Radiotherapy, Single-dose

Outcome measures

Primary outcome

Rate of patients with pathologic complete response (pCR) following the single-dose preoperative radiotherapy treatment.

Secondary outcome

Radiologic response, pathologic response in irradiated tumor tissue and excision specimen, immune response, circulating tumor DNA, toxicity, cosmetic result, quality of life, anxiety and depression, local and regional recurrence, disease free survival, overall survival.

Study description

Background summary

Patients with early stage breast cancer, and a low risk of recurrence of disease after treatment, are currently being treated with breast-conserving surgery followed by whole or partial breast irradiation according to (inter)national guidelines. If patients receive preoperative partial breast radiotherapy preoperative instead of postoperative irradiation, smaller volumes of the breast can be irradiated. Consequently, the radiotherapy can be administered in less fractions, even in a single dose. In preoperative partial breast irradiation, tumor response can be monitored, and pathologic complete response after radiotherapy can be observed.
In a previous trial (ABLATIVE trial, NL 46017.041.13) only mild toxicity was found after single dose preoperative radiotherapy. In this study a pathologic complete response was observed in 42% of the treated patients.
In the ABLATIVE-2 trial, we will investigate whether predictors for pathologic complete response can be identified. We will use MRI, tumor tissue and liquid biopsy for response monitoring after preoperative radiotherapy. If a large proportion of patients achieve a pathologic compete response, and (bio)markers for response monitoring can be found, a sequential study will be performed to develop a prediction model for pathologic complete response. The blue sky is

that in patients with a predicted pathologic complete response, surgery could be omitted. In patients with no predicted pathologic complete response, need to undergo surgery, and have the benefit of only one single dose radiotherapy instead of radiotherapy during 1 to 4 weeks.

Study objective

The goal of this study is to assess the efficacy of single dose preoperative radiotherapy in patients with low-risk breast cancer. In this context, efficacy is the proportion of patients achieving a pathologic complete response after single dose radiotherapy. In addition, we will investigate possible predictors of response in blood and tumor tissue, and evaluate treatment-induced toxicity, patient-reported outcomes and oncologic outcomes.

Study design

This is a single arm interventional cohort trial. Patients who initially fulfill inclusion criteria will undergo a diagnostic MRI scan. If MRI shows a unifocal tumor, the patient can be treated with single dose partial breast irradiation. After 2 weeks, and after 3, 6, 9 and 12 months an MRI will be performed and blood samples will be taken to evaluate the tumor response after the single dose radiotherapy. This will be combined with a consultation by the radiation oncologist.
After 12 months breast conserving surgery and sentinel node procedure will be performed. If progression of the tumor is observed on MRI, breast conserving surgery will be performed as soon as possible.
Patients will be followed for a total of 10 years through mammography and physical examination. During the entire study the patients will be asked to fill out questionnaires, to evaluate patient-reported outcomes including toxicity and cosmetic outcome. In addition, digital photographs of the breasts will be taken to evaluate cosmetic outcome.

Intervention

MR-guided single dose preoperative radiotherapy 20 Gy to the tumor.

Study burden and risks

Patients have to undergo multiple MR images, and additional blood sampling (that will be combined as much as possible with the venipuncture for intravenous contrast administration during MRI).
Patients can give extra consent for additional tumor biopsy that can be combined with insertion of a clip (in case the clip has not been inserted already). If the clip has already been inserted, than this additional biopsy will be an additional procedure (after extra informed consent).

For patients the period between radiotherapy and surgery can be a mental burden.
The burden of radiotherapy treatment will be reduced in the ABLATIVE-2 to one single session instead of 5 to 20 radiotherapy sessions in the standard treatment.
The risks for patients participating in the study are similar to those of patients receiving standard of care. To keep the risk of recurrent disease to a minimum we will perform surgery ahead of time if tumor progression is observed on MRI.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)

Inclusion criteria

Female, 50 years or older, breast cancer, ER positive tumor, HER2-negative

tumor, maximal tumorsize 2 cm, Bloom Richardson grade 1 or 2

Exclusion criteria

Indication for chemotherapy, lobular carcinoma, previous breast cancer, lymph node or distant metastasis, breast cancer gene mutation, previous irradiation of chest wall, breast implant.

Study design

Design

Study phase:	2
Study type:	Interventional
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	24-08-2022
Enrollment:	90
Type:	Actual

Medical products/devices used

Registration:	No

Ethics review

Approved WMO

Date:	11-01-2022
Application type:	First submission
Review commission:	METC Amsterdam UMC

Approved WMO Date:	12-08-2022
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	31-10-2022
Application type:	Amendment
Review commission:	METC Amsterdam UMC
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Application type:	Amendment
Review commission:	METC Amsterdam UMC
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Review commission:	METC Amsterdam UMC
Approved WMO Date:	20-03-2024
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	05-08-2024
Application type:	Amendment
Review commission:	METC Amsterdam UMC

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	NL77000.029.21