Radiation dose intensity study in breast cancer in young women: a randomized phase III trial of additional dose to the tumor bed.

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON21034

Source
NTR

Brief title
Young Boost Trial

Health condition

Breast cancer

Sponsors and support

Primary sponsor: Prof. dr H. Bartelink, AvL/NKI, Plesmanlaan 121, 1069 CX Amsterdam
Source(s) of monetary or material Support: CKTO 2003-13

Intervention

Outcome measures

Primary outcome

Local control at 10 yr.

Secondary outcome

1. Cosmetic outcome.

Additional objectives:

A. To test the genotypic and phenotypic profiles of breast tumors [van de Vijver et al.,2002] in young patients with invasive breast cancer, and its relation to:

a. Local recurrence after BCT;

b. Lymph node metastases;

c. Distant metastases and surviva;

d. Radiosensitivity;

e. Age;

B. To determine whether improved genotypic and phenotypic profiles can be determined related to the endpoints mentioned in A.

Study description

Background summary

Title of the study:
Radiation dose intensity study in breast cancer in young women: a randomized phase III trial of additional dose to the tumor bed.

Background and aim of the study:
Several studies showed that breast conserving therapy (BCT) yields similar survival rates as mastectomy. BCT consists of lumpectomy followed by whole breast radiotherapy (WBRT). Three studies showed that an additional dose to the tumor bed, after 50 Gy WBRT, reduces the local recurrence rate (LRR). The largest of these 3 studies was a recent EORTC trial, which also showed that young age was an independent risk factor for LR after BCT.
In patients < 51 years of age, the LR rate was reduced with 50% after a 66 Gy dose to the tumor bed, compared to 50 Gy (5-year LRR 12% vs 5.9%, $p < 0.02$). However, the LRR in young women was still quite high (> 1% per year). Therefore the first aim of the study is to investigate whether an additional boost dose to the tumorbed (26 Gy) reduces the LRR further. Therefore, we will compare the effect of a low boost dose (16 Gy) with the effect of a high boost dose (26 Gy) on the LRR, but also on the cosmetic outcome.
The second, very important aim of this study is to investigate whether we can find genetic or protein profiles that correlate with LRR, lymph node metastases, distant metastases, survival,

radiosensitivity, and age. For this purpose we will obtain frozen tumor material and blood samples of as many patients as possible.

Population, study design, intervention:
Patients younger than 51 years of age, with stage T1-2N01-2aM0 breast cancer, and where the tumor can be locally excised with acceptable cosmetic result, will be randomized between a 16 Gy boost dose to the tumorbed and a 26 Gy boost dose to the tumor bed, after 50 Gy WBRT. Patients will be stratified based on age, tumor size, lymph node metastases, estrogen receptor status, interstitial or external boost irradiation, and institution. In principle frozen tumor samples and blood samples will be stored of each patient.

Endpoints and statistics:
The primary endpoint is LRR are 10 years.
The secondary endpoint is cosmetic result, which will be quantified using digitized color photographs. In addition, patients will be asked to give their opinion about the cosmetic result using standardized questionnaires.
To find an increase in the local control rate of 88% to 93% at 10 year, with a power of 80% and a significance level of 5%, 580 patients will be included in each treatment arm.

Side studies:
An extremely important aspect of this trial is to obtain fresh tumor material and blood samples. These will be used to determine genetic and protein profiles aimed at finding subgroups based on these profiles, which may take more or less advantage of the additional radiation treatment.

Study objective

10 Gy additional boost to the tumor bed will yield an increase in local control at 10 years from 88% to 93%, with still acceptable cosmesis.

Intervention

All patients will be treated with breast conserving therapy, followed by 50 Gy to the whole breast.
Patients will be randomized to receive a boost dose of 16 Gy or 26 Gy to the tumorbed.

Contacts

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Eligibility criteria

Inclusion criteria

1. Age 50 years or younger;

2. Histological diagnosis of invasive mammary cancer including all subtypes of invasive adenocarcinoma;

3. Tumor location and extension imaged prior to surgery using at least mammography and ultrasound;

4. Unicentric tumors and multifocal tumors removed using a wide local excision; microscopic radical resection (focally involved margins allowed, defined as:

any DCIS or invasive carcinoma in 3 or fewer low-power fields (using a x 4 objective and a x 10 ocular lens, which has a diameter of 5 mm per low-power microscopic fields);

5. Sentinel lymph node biopsy and/or axillary lymph node dissection has been performed;

6. Breast cancer stage: pT1-2pN0-2a M0;

7. No treatment is allowed prior to surgery (no neoadjuvant chemotherapy, no neoadjuvant hormonal therapy, no pre-operative radiotherapy);

8. In cases where no adjuvant chemotherapy is given, wide local excision has been performed < 10 weeks before the start of radiotherapy;

9. In cases where adjuvant chemotherapy is given immediately after surgery, wide local excision has been performed < 6 months before the start of radiotherapy, and chemotherapy should be completed < 6 weeks before the start of radiotherapy;

10. In cases where hormonal treatment is planned, this is given after completion of

the radiotherapy;

11. No previous history or synchronous malignant tumor in the other breast, previous history of malignant disease, except adequately treated carcinoma in situ of the cervix or basal cell carcinoma of the skin;

12. ECOG performance scale 2 or less.

Exclusion criteria

1. Residual microcalcifications on mammogram;

2. All histological types of malignancies other than invasive adenocarcinoma;

3. In situ carcinoma of the breast, without invasive tumor;

4. Concurrent pregnancy;

5. Multicentric tumors, and multifocal.
tumors excised using multiple excisions;
6. Invasive breast cancer in both breasts.

Study design

Design

Study type:	Interventional
Intervention model:	Other
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-07-2004
Enrollment:	1160
Type:	Anticipated

Ethics review

Positive opinion

Date:	14-08-2005
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	NL91
NTR-old	NTR120
Other	: 1
ISRCTN	ISRCTN45066831

Study results

Summary results
N/A