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

Gepubliceerd: 14-08-2005 Laatst bijgewerkt: 13-12-2022

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.

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON21034

Bron
NTR

Verkorte titel
Young Boost Trial

Aandoening

Breast cancer

Ondersteuning

Primaire sponsor: Prof. dr H. Bartelink, AvL/NKI, Plesmanlaan 121, 1069 CX Amsterdam
Overige ondersteuning: CKTO 2003-13

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Local control at 10 yr.

Toelichting onderzoek

Achtergrond van het onderzoek

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.

Doel van het onderzoek

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.

Onderzoeksproduct en/of interventie

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.

Contactpersonen

Publiek

Nederlands Kanker Instituut/ Antoni van Leeuwenhoek hospital, Plesmanlaan 121
H. Bartelink
Plesmanlaan 121
Amsterdam 1166 CX
The Netherlands
+31 (0)20 5121721

Wetenschappelijk

Nederlands Kanker Instituut/ Antoni van Leeuwenhoek hospital, Plesmanlaan 121
H. Bartelink
Plesmanlaan 121
Amsterdam 1166 CX
The Netherlands
+31 (0)20 5121721

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen

(Inclusiecriteria)

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.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

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.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Anders
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-07-2004
Aantal proefpersonen:	1160
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	14-08-2005
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL91
NTR-old	NTR120
Ander register	: 1
ISRCTN	ISRCTN45066831

Resultaten

Samenvatting resultaten
N/A