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Estrogen Receptor Beta (ER-β) as a coadjuvant target of neoadjuvant endocrine therapy

Submission date
26/01/2013

Recruitment status
No longer recruiting

Registration date
06/02/2013

Overall study status
Completed

Last Edited
27/06/2014

Condition category
Cancer

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
The role of estrogen receptor beta (ER-β) in human breast cancer remains unclear. There is no consensus regarding the clinical utility of an ER-β assay. Some studies have suggested that ER-β may oppose the actions of estrogen receptor alpha (ER-α), and clinical evidence has indicated that the loss of ER-β expression is associated with a poor prognosis and resistance to endocrine therapy. The objective of the present study is to determine the role of ER-β and the ER-α/ER-β ratio in predicting the response to endocrine therapy and whether different regimens have any effect on ER-α and ER-β expression levels.

Who can participate?
Postmenopausal women with histologically confirmed invasive breast cancer without previous treatment for the disease (surgery, radio or chemotherapy).

What does the study involve?
Patients with operable breast cancers will be randomly allocated to one of three groups: receive 26 days of treatment with anastrozole (1 mg/day), tamoxifen (20 mg/day) or placebo. The pre- and post-hormone therapy samples will be placed in tissue microarray blocks and submitted to immunohistochemical assay. Biomarker statuses (ER-β, ER-α and Ki67) will be obtained by comparing each immunohistochemical evaluation of the pre- and post-surgery samples using the semi-quantitative Allred´s method.

What are the possible benefits and risks of participating?
There will be no immediate direct benefit to those taking part. A treatment period of 26 days was chosen for this study because this is the average time needed to complete routine preoperative testing in most Brazilian institutions, justifying the use of placebo without negative consequences to the patients. In addition, the period of drug exposure is too short to observe the most important side effects of treatment in the anastrozole and tamoxifen groups.

Where is the study run from?
Two centres are taking part in this study. Patients will be recruited at Pérola Byington Hospital, Sao Paulo / Brazil and Federal University of Sao Paulo Hospital, Sao Paulo / Brazil.

When is the study starting and how long is it expected to run for?
The study started in October 2010 and will run for 36 months or until the required number of 90 patients have been recruited and evaluated.

Who is funding the study?
Senology Discipline, Department of Gynecology, Federal University of Sao Paulo UNIFESP (Brazil)

Who is the main contact?
Marcelo Madeira
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Contact information

Type(s)
Scientific

Contact name
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04004-002

Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
N/A

Study information

Scientific Title
Estrogen Receptor Beta (ER-β) as a predictor of endocrine therapy responsiveness A randomised neoadjuvant trial comparison between Anastrozole and Tamoxifen for the treatment of postmenopausal breast cancer

Study objectives
Several studies have suggested that the expression of ER-β independently predicts a better disease-free survival in breast cancer patients. Our hypothesis is that the measurement of ER-β or the ratio of ER-α/ER-β expression in breast cancer patients may help predict tamoxifen and anastrozole responsiveness in the neoadjuvant therapy.

Ethics approval required

Old ethics approval format

Ethics approval(s)
Human Investigation Committees of Federal University of São Paulo (UNIFESP) and Pérola Byington Hospital, 30-Jul-2010, ref: CEP0894/10 (Brazil)

Study design
Randomised prospective controlled double-blind study

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
Not available in web format, please contact marcemadeira@gmail.com or mattar.andre@gmail.com to request a patient information sheet

Health condition(s) or problem(s) studied
Breast Cancer

Interventions
Patients with operable breast cancers will receive orally treatment with anastrozole (1 mg/day), tamoxifen (20 mg/day) or placebo during 26 days.

Intervention Type
Drug

Phase
Not Specified

Drug/device/biological/vaccine name(s)
Anastrazole, tamoxifen

Primary outcome measure
To determine the role of ER-β in predicting the response to breast cancer therapy with anastrozole and tamoxifen we will observe the expression of Ki67 (cell proliferation marker) in tumor biopsy samples taken before and after treatment (26 days) of ER-β-positive and ER-β-negative breast cancer patients.

Secondary outcome measures
The ER-α/ER-β expression ratio predicting the response to breast cancer endocrine therapy and whether different regimens of treatment have any effect on ER-α and ER-β expression levels.

Overall study start date
29/10/2010

Completion date
29/10/2013

Eligibility

Key inclusion criteria
Histologically confirmed invasive breast cancer in women who were postmenopausal, which is defined as no menstruation periods over the last 12 months and/or an FSH level within the postmenopausal range.

Participant type(s)
Patient

Age group
Adult

Sex
Female

Target number of participants
90

Key exclusion criteria
1. The presence of endocrine disease, metastatic disease, inflammatory breast cancer (T4d)
2. History of thromboembolism
3. Use of hormone replacement therapy (HRT) or previous treatment for breast cancer (surgery, radio or chemotherapy). Patients who do not comply with the prescribed medication regimen or postpone surgery are also excluded from the study. Patients who had previously taken HRT may be included if they have stopped hormonal treatment at least six months prior to trial randomisation.

Date of first enrolment
29/10/2010

Date of final enrolment
29/10/2013

Locations

Countries of recruitment
Brazil

Study participating centre
R. Sampaio Viana, 580
Sao Paulo

Brazil
04004-002

Sponsor information

Organisation
Federal University of Sao Paulo (Brazil)

Sponsor details
Senology Discipline
Department of Gynecology
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04023-900

Sponsor type
University/education

Website
http://www.unifesp.br

ROR
https://ror.org/02k5swt12

Funder(s)

Funder type
University/education

Funder Name
Federal University of Sao Paulo (UNIFESP) - Senology Discipline, Department of Gynecology (Brazil)

Results and Publications

Publication and dissemination plan
Not provided at time of registration

Intention to publish date

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	18/09/2013		Yes	No