ISRCTN registry

ISRCTN14341750 https://doi.org/10.1186/ISRCTN14341750

Diagnosis of axillary lymph node status in primary breast cancer without a surgical procedure

Condition category
Cancer
Date applied
21/10/2018
Date assigned
23/11/2018
Last edited
31/08/2021
Prospective/Retrospective
Retrospectively registered
Overall trial status
Ongoing
Recruitment status
Recruiting

Plain English Summary

Background and study aims

Today, breast cancer is diagnosed at an early stage due to public screening mammography and increased awareness of the disease in the community. As a consequence of early diagnosis, tumor size at time of diagnosis has decreased and the risk of spread to the lymph nodes now affects less than 30% of all breast cancer patients. Despite this, all breast cancer patients undergo a surgical procedure, sentinel lymph node biopsy, to define if axillary lymph nodes are infiltrated by cancer cells. In more than 70% of these patients, there have no cancer infiltration in their axillary lymph nodes and therefore, the procedure has no benefit. Sentinel lymph node biopsy can lead to side-effects such as pain and swelling.
The aim of the study is to evaluate the capacity of patient related and tumor characteristics to determine whether the cancer has spread to the lymph nodes, so that low-risk groups can avoid sentinel node biopsy.

Who can participate?

Patients diagnosed with invasive breast cancer at any age scheduled for primary surgery and without clinically pathological lymph nodes

What does the study involve?

There is no direct involvement for participants. Instead, their medical records and data will be analysed by the study team and they will receive breast cancer treatment as

usual.

What are the possible benefits and risks of participating?
As there is no direct involvement of participants and they will receive routine treatment, there are no known benefits or risks to participants taking part in this study.

Where is the study run from?
Skåne University Hospital (Lund and Malmö) (Sweden)

When is the study starting and how long is it expected to run for?
January 2008 to December 2022

Who is funding the study?
1. Lund Univerisity (Sweden)
2. The Swedish Breast Cancer Fund (Sweden)
3. South Swedish Health Care Region (Sweden)
4. Erling Persson Foundation (Sweden)
5. Vetenskapsrådet [Swedish Research Council] (Sweden)

Who is the main contact?
Professor Lisa Rydén
lisa.ryden@med.lu.se

Trial website

Contact information

Type
Scientific

Primary contact
Prof Lisa Rydén

ORCID ID
http://orcid.org/0000-0001-7515-3130

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Additional identifiers
EudraCT number
IRAS number
ClinicalTrials.gov number
Protocol/serial number
NILS 1.0

Study information

Scientific title

NILS: Non-Invasive Lymph node Staging

Acronym

NILS

Study hypothesis

Preoperatively available information on clinicopathological characteristics can aid in predicting nodal status in primary breast cancer

Ethics approval

1. Approved 15/08/2012, Lund University, ref: 2012/340
2. Approved 07/07/2019, Swedish Ethical Review Authority, ref: 2019-02139
3. Approved 15/02/2021, Swedish Ethical Review Authority, ref: 2021-00174

Study design

Observational prospective cohort study with retrospective estimation of nodal status

Primary study design

Observational

Secondary study design

Cohort study

Trial setting

Hospitals

Trial type

Diagnostic

Patient information sheet

Not available in web format, please use contact details to request a participant information sheet

Condition

Clinically node-negative primary breast cancer

Intervention

Current intervention as of 31/08/2021:
Patients in this study are undergoing standard diagnostic work-up within the clinical pathway for breast cancer including a clinical examination, mammogram, ultrasound and core biopsy of the tumor before surgery. At time of surgery, they undergo standard procedure according to the multidisciplinary conference and the tumor and axillary nodes are pathologically examined. No extra diagnostic or interventional procedure is undertaken. Logistic regression and artificial neural network models are applied to predict nodal status from clinicopathological data. No
follow-up data is extracted as this is an observational diagnostic trial. Separate cohorts will be used for validation of the nomogram and ANN models.

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Previous intervention:
Patients in this study are undergoing standard diagnostic work-up within the clinical pathway for breast cancer including a clinical examination, mammogram, ultrasound and core biopsy of the tumor before surgery. At time of surgery, they undergo standard procedure according to the multidisciplinary conference and the tumor and axillary nodes are pathologically examined. No extra diagnostic or interventional procedure is undertaken. Logistic regression and artificial neural network models are applied to predict nodal status from clincopathological data. No follow-up data is extracted as this is an observational diagnostic trial.

Intervention type

Other

Phase
Drug names
Primary outcome measure

Current primary outcome measure as of 31/08/2021:
Axillary nodal status stratified by stage N0, N1 and N2, determined from pre-operatively available clinicopathological data after surgery compared with the predictive N-status by the algorithms

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Previous primary outcome measure:
Axillary nodal status stratified by stage N0, N1 and N2, determined from pre-operatively available clinicopathological data after surgery

Secondary outcome measures

False negative rate with negative predictive value of NPV max to 10% for prediction of N0, determined from sentinel node biopsy data after surgery

Overall trial start date

01/01/2008

Overall trial end date
31/12/2022
Reason abandoned (if study stopped)

Eligibility

Participant inclusion criteria

Current inclusion criteria as of 31/08/2021:
1. Invasive breast cancer
2. Clinically and ultrasound node-negative disease
3. Scheduled for primary surgery
4. Female

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Previous inclusion criteria:
1. Invasive breast cancer
2. Clinically node-negative disease
3. Scheduled for primary surgery
4. Female

Participant type

Patient

Age group

Adult

Gender

Female

Target number of participants

800 primary cohort, 600 and 22000 in validation cohort

Participant exclusion criteria

1. Male
2. Previous ipsilateral breast or axillary surgery
3. Previous neoadjuvant therapy
4. Palpable axillary lymphadenopathy
5. No axillary staging

Recruitment start date

01/01/2009

Recruitment end date
31/12/2022

Locations

Countries of recruitment

Sweden

Trial participating centre

Skåne University Hospital
Lund and Malmö
22185
Sweden

Sponsor information

Organisation

Lund University

Sponsor details

Medicon Village 406
Scheleevägen 2
Lund
223 85
Sweden

Sponsor type

University/education

Website

www.med.lu.se

GRID

grid.4514.4

Funders

Funder type

University/education

Funder name

Lunds Universitet

Alternative name(s)

Lund University

Funding Body Type

government organisation

Funding Body Subtype

Local government

Location

Sweden

Funder name

South Swedish Health Care Region

Alternative name(s)
Funding Body Type
Funding Body Subtype
Location
Funder name

Bröstcancerfonden

Alternative name(s)
Funding Body Type
Funding Body Subtype
Location
Funder name

Familjen Erling Perssons Stiftelse

Alternative name(s)
Funding Body Type
Funding Body Subtype
Location
Funder name

Vetenskapsrådet

Alternative name(s)

Swedish Research Council, VR

Funding Body Type

government organisation

Funding Body Subtype

National government

Location
Sweden

Results and Publications

Publication and dissemination plan

A nomogram based on logistic regression data has been published and external validation is ongoing. Data analysis from ANN is finished and a manuscript is pending

Intention to publish date

31/03/2023

Individual participant data (IPD) sharing statement

The datasets analysed during the current study will be available upon request from Lisa Rydén (lisa.ryden@med.lu.se) for baseline characteristics after approval from regulatory authorities responsible of data sharing for Region Skåne. The dataset is kept pseudoanonymised and will be available for any researcher with a documented scientific experience in prediction models of nodal status in order to validate other prediction models generated from their own data. GDPR requires an informed consent to state that data sharing with third party is to be performed and this can be arranged by an opt-out procedure.

Participant level data

Available on request

Trial outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Basic results		02/11/2018	24/04/2019	No	No
Other publications	Nomogram validation	01/05/2021	31/08/2021	Yes	No
Results article	Nomogram initial results	01/10/2017		Yes	No
Results article	Artificial neural network modeling initial results	21/06/2019	24/06/2019	Yes	No

Additional files

- ISRCTN14341750_BasicResults_02Nov2018.pdf uploaded 24/04/2019

Editorial Notes

31/08/2021: The following changes have been made: 1. The ethics approval has been updated. 2. The overall trial end date has been changed from 31/12/2018 to 31/12/2022 and the plain English summary updated accordingly. 3. The intervention has been changed. 4. The primary outcome measure has been changed. 5. The participant inclusion criteria have been changed. 6. The participant age group has been changed from 'All' to 'Adult'. 7. The target number of participants has been changed from "800" to

"800 primary cohort, 600 and 22000 in validation cohort" and the previously added final enrolment number removed. 8. The recruitment end date has been changed from 31/12/2012 to 31/12/2022. 9. Vetenskapsrådet (Swedish Research Council) has been added as a funder and the plain English summary updated accordingly. 10. Publication reference added. 11. The intention to publish date has been changed from 31/03/2019 to 31/03/2023. 24/06/2019: The following changes have been made: 1. Publication reference added. 2. The final enrolment number has been added from the results publication. 24/04/2019: The basic results of this trial have been uploaded as an additional file.