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ION - Is ablative radiOiodine Necessary for low risk differentiated thyroid cancer patients?

Submission date 11/01/2011	**Recruitment status** No longer recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 03/03/2011	**Overall study status** Ongoing	
Last Edited 24/06/2025	**Condition category** Cancer	

Plain English summary of protocol
http://cancerhelp.cancerresearchuk.org/trials/a-trial-to-see-if-radioactive-iodine-treatment-is-necessary-for-low-risk-thyroid-cancer-ion

Study website
http://www.ctc.ucl.ac.uk/

Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
2011-000144-21

IRAS number
75777

ClinicalTrials.gov number
NCT01398085

Secondary identifying numbers
UCL/10/0299, IRAS 75777

Study information

Scientific Title
Randomised trial comparing total thyroidectomy, thyriod stimulating hormone (TSH) suppression and radioactive iodine ablation with total thyroidectomy and TSH suppression, in low-risk patients with thyroid cancer

Acronym
ION

Study objectives
Phase II:
To determine if recruitment into a phase III trial is feasible, with a target of 10 patients per month during a minimum period of 6 months (evaluated within months 7 - 18 of the trial).

Phase III:
To determine whether the 5-year recurrence-free survival rate among patients who do not have routine radioactive iodine (RAI) ablation is non-inferior to those that do.

As of 06/06/2012, the following changes have been made to the trial.
Anticipated start date has been updated from 02/05/2011 to 16/05/2012.
Anticipated end date has been updated from 05/05/2015 to 16/05/2021 (includes recruitment and follow up phase).
Target number of participants has been increased from 550 to 570.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Added as of 06/06/2012
North East - Newcastle and Tyneside REC approved on 15/09/2011 (ref: 11/NE/0228)

Birmingham Research Ethics Committee (REC) approval pending as of 12/01/2011

Study design
Randomized non-blind non-inferiority Phase II/III multicentre trial

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 use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied
Differentiated thyroid cancer

Interventions
Following surgery, eligible patients will be approached for consent. Those who agree will be randomised to one of the following groups:
1. Radioactive iodine (RAI) ablation arm (1.1 GBq), or
2. No radioactive iodine (NO-RAI) ablation arm

Total duration of treatment will be from randomisation to last scan (8 - 9 months), and follow-up will be for 5 years.

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Intervention Type
Drug

Phase
Phase II/III

Drug/device/biological/vaccine name(s)
Radioactive iodine

Primary outcome measure
1. Phase II: monthly patient accrual rates, evaluated 7 - 18 months after the start. There will then be a decision on whether to proceed to phase III or not
2. Phase III: 5-year recurrence-free survival, evaluated after the last patient has their last follow-up or sooner depending on the data

Secondary outcome measures
Current secondary outcome measure (s) as of 06/06/2012:
Phase III only (evaluated by the statistician at the final analysis at the end of the study):
1. Quality of life (E5-QD, QLQ-C30, H&N35)
2. Adverse events (Common Toxicity Criteria for Adverse Events [CTCAE])
3. Thyroid cancer mortality

4. Loco-regional recurrence
5. Distant metastases
6. Incidence of second primary tumours

Analysis will depend on recruitment but if the trial goes to phase III we expect all patients to be recruited in 3 - 4 years so last visit and analysis will be 8-9 years after the start.

Previous secondary outcome measure (s):
Phase III only (evaluated by the statistician at the final analysis at the end of the study):
1. Quality of life (E5-QD and SF-36)
2. Adverse events (Common Toxicity Criteria for Adverse Events [CTCAE])
3. Thyroid cancer mortality
4. Loco-regional recurrence
5. Distant metastases
6. Incidence of second primary tumours

Analysis will depend on recruitment but if the trial goes to phase III we expect all patients to be recruited in 3 - 4 years so last visit and analysis will be 8-9 years after the start.

Overall study start date
16/05/2012

Completion date
31/03/2031

Eligibility

Key inclusion criteria
Current inclusion criteria as of 06/06/2012
1. R0 total thyroidectomy (in 1 or 2 stages, no residual disease present)
2. Negative pregnancy test in females of child bearing potential
3. Aged 16 years or over
4. WHO performance status 0 2, self caring
5. Histological confirmation of differentiated thyroid carcinoma
6. Papillary thyroid cancer:
6.1 Non agressive histological features (small foci of agressive histology allowed)
6.2 pT1b, 1-2cm intrathyroidal
6.3 pT2, 2-4cm intrathyroidal
6.4 pT3 intrathyroidal only
6.5 Multifocal carcinoma
6.6 pN0
6.7 pN1a
6.8 pNX
7. Follicular thyroid cancer/Hürthle cell cancer (minimally invasive with capsular invasion only
7.1 pT1b (1-2cm) pT2 (2-4cm) intrathyroidal

Previous inclusion criteria
1. Negative pregnancy test in females of child bearing potential
2. Aged 16 years or over, either sex
3. World Health Organization (WHO) performance status 0 2
4. R0 total thyroidectomy (in 1 or 2 stages, no residual disease present)

5. Histological confirmation of differentiated thyroid carcinoma
6. Papillary thyroid cancer:
6.1. Non aggressive histological features (small foci allowed)
6.2. T1b, 1 - 2 cm, intrathyroidal
6.3. T2, 2 - 4 cm, intrathyroidal
6.4. T3, intrathyroidal
6.5. No vascular invasion
6.6. Multifocal microcarcinoma
6.7. N0
6.8. N1a
6.9. NX
7. Follicular thyroid cancer/Hürthle cell cancer:
7.1. Minimally invasive (capsular invasion only)
7.2. Tumours 2 cm or less
7.3. N0
7.4. N1a
7.5. NX

Participant type(s)
Patient

Age group
Adult

Lower age limit
16 Years

Sex
Both

Target number of participants
570

Total final enrolment
504

Key exclusion criteria
Current exclusion criteria as of 06/06/2012
1. Papillary and Follicular carcinoma which is unifocal and <1cm in size
2. Encapsulated Follicular Variant of Papillary Thyroid Cancer (EFVPTC) that is:
2.1. non-invasive
2.2. angio-invasive
3. Anaplastic or medullary carcinoma
4. R1 thyroidectomy
5. Patients with:
5.1 pN1b
5.2 M1
6. Aggressive Papillary thyroid cancer with the following features:
6.1 Angio-invasive
6.2 Widely invasive
6.3 Poorly differentiated

6.4 Anaplastic differentiation
6.5 Tall cell
6.6 Columnar cell
6.7 Diffuse sclerosing variants
7. Follicular thyroid cancer/Hürthle cell cancer with the following features:
7.1. Angio-invasive
7.2. Widely invasive
7.3. Poorly differentiated
7.4. Tumours greater than 4cm
8. Incomplete resection/lobectomy
9. Macroscopic and microscopic tumour invasion of locoregional tissues or structures
10. Women who are lactating
11. Patients who have had CT performed with iv contrast less than 3 months before ablation
12. Previous treatment for thyroid cancer (except surgery)
13. Previous malignancies with limited life expectancy or likely to interfere with the patient's ability to be able to comply with treatment and/or follow-up for at least 5 years
14. Dysphagia
15. Oesophageal stricture
16. Active gastritis
17. Gastric erosions
18. Peptic ulcer
19. Suspected reduced gastrointestinal motility
20. Severe co-morbid condition/s that would prevent ablation including:
20.1. Unstable angina
20.2. Recent myocardial infarction or cerebrovascular accident (CVA)
20.3. Severe labile hypertension
21. Any patient who cannot comply with radiation protection including:
21.1. patients with learning difficulties
21.2. patients with dementia
21.3. patients with a tracheostomy that require nursing care
21.4. patients requiring frequent nursing/ medical supervision

Previous exclusion criteria
1. Pregnant women or women who are breastfeeding
2. Patients who have computed tomography (CT) performed with intravenous (iv) contrast less than 3 months before ablation
3. Previous treatment for thyroid cancer (not including surgery)
4. Incomplete resection/lobectomy
5. Local or distant metastases at diagnosis
6. Macroscopic and microscopic tumour invasion of locoregional tissues or structures
7. Anaplastic or medullary carcinoma
8. Patients with:
8.1. N1b
8.2. M1
9. Previous malignancies with limited life expectancy likely to interfere with the patient's ability to be able to comply with treatment and/or follow-up
10. Severe co-morbid condition/s that would prevent ablation including:
10.1. Unstable angina
10.2. Recent myocardial infarction or cerebrovascular accident (CVA)
10.3. Severe labile hypertension
10.4. Any patient who cannot comply with radiation protection including:
10.4.1. Patients with learning difficulties

10.4.2. Patients with dementia
10.4.3. Patients with a tracheotomy that require nursing care
10.4.4. Patients requiring frequent nursing/ medical supervision
11. Papillary thyroid cancer that is:
11.1. Widely invasive
11.2. Poorly differentiated
11.3. Tall cell
11.4. Columnar cell
11.5. Diffuse sclerosing variants
12. Follicular thyroid cancer/Hürthle cell cancer that is:
12.1. Widely invasive
12.2. Poorly differentiated
12.3. Tumours greater than 2 cm
12.4. Diffuse sclerosing variants

Date of first enrolment
16/05/2012

Date of final enrolment
30/03/2020

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
Cancer Research UK & UCL Cancer Trials Centre
London
United Kingdom
W1T 4TJ

Sponsor information

Organisation
University College London (UCL) (UK)

Sponsor details
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149 Tottenham Court Road
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United Kingdom
W1T7DN

Sponsor type
University/education

Website
http://www.ucl.ac.uk/joint-rd-unit/

ROR
https://ror.org/02jx3x895

Funder(s)

Funder type
Charity

Funder Name
Cancer Research UK (CRUK) (UK)

Alternative Name(s)
CR_UK, Cancer Research UK - London, CRUK

Funding Body Type
Private sector organisation

Funding Body Subtype
Other non-profit organizations

Location
United Kingdom

Results and Publications

Publication and dissemination plan
The final analysis is planned to be carried out in December 2023. Planned publication in a high-impact peer-reviewed journal.

Intention to publish date

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from IoN trial manager (ctc.ion@ucl.ac.uk).
The type of data that will be shared: this will be dependent on the request and the data that the patient has consented to
When the data will become available and for how long: to be confirmed
By what access criteria data will be shared including with whom: researchers who wish to access

data should contact the CTC (email address above)
For what types of analyses, and by what mechanism: will be assessed on a case-by-case basis
Whether consent from participants was obtained: consent was given to collect the data. Data cannot be shared if patients withdrew consent to data collection/use.
Comments on data anonymisation: data will be pseudonymised
Any ethical or legal restrictions: research for the data request should be ethically approved

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No
Results article	Phase III primary endpoint: 5-year recurrence-free survival results	18/06/2025	24/06/2025	Yes	No