

Controlled Antenatal Thyroid Screening study

Submission date 22/07/2005	Recruitment status No longer recruiting	☐ Prospectively registered
Registration date 22/07/2005	Overall study status Completed	☐ Protocol
Last Edited 12/06/2015	Condition category Nutritional, Metabolic, Endocrine	☐ Statistical analysis plan
		☒ Results
		☐ Individual participant data

Plain English summary of protocol

Background and study aims.

There is evidence from previous studies that low thyroid function during pregnancy may affect the intelligence quotient (IQ) of the child. However there have been no prospective studies to confirm this. We carried out a study to answer the question: Does testing thyroid function in early pregnancy and treating those women with underactive thyroids improve the IQ of their children?

Who can participate?

We recruited 22000 women pregnant with one baby (singleton pregnancies) before 16 weeks gestation who were not taking thyroid medication.

What does the study involve?

Blood samples were randomly allocated to a screen group and a control group. Thyroid testing was done immediately in all samples from the screen group. The control group samples were stored until the woman delivered the baby and the thyroid test was then carried out. Note: at the time of this trial (2002) there was no routine screening of thyroid function in pregnant women. The screen group women who were found to have an underactive thyroid received Levothyroxine daily for the length of the pregnancy. The control group received no treatment during pregnancy. The women who had an underactive thyroid diagnosed after delivery were referred to their general practitioner for standard care.

What are the possible benefits and risks of participating?

The women participating had a 50% chance of having thyroid function measured during early pregnancy (compared to 0% chance in normal practice). They then had the opportunity to see if the thyroxine intervention improved the IQ of their child compared to the children born to mothers from the control group. Side effects of thyroxine include palpitations and tiredness. Thyroid testing was done in women taking thyroxine 6 weeks after starting and again at 30 weeks of pregnancy. Less than 5% of women required a dose adjustment.

Where is the study run from?

The study was run from the University Hospital of Wales, Cardiff University. There were approximately 8 centres including one in Turin, Italy.

When is the study starting and how long is it expected to run for?
The study started in 2002 and ended in 2010.

Who is funding the study?
Wellcome Trust

Who is the main contact?
Professor JH Lazarus
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Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Protocol serial number
065143

Study information

Scientific Title
Randomised controlled trial of the effect of gestational thyroid hormone intervention therapy on childhood development

Acronym
CATS

Study objectives
Aim is to evaluate strategy of screening of thyroid function in early pregnancy.

Ethics approval required
Old ethics approval format

Ethics approval(s)

Primary study design

Interventional

Study design

Multicentre randomised controlled trial

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Childhood development

Interventions

Sera obtained from pregnant women before 16 weeks gestation. Sera randomised to 'screen' (T4 and Thyroid Stimulating Hormones [TSH] measured at time of randomisation) and 'control' (hormones measured post delivery) groups. Thyroxine intervention given to screen group with low T4/high TSH and to control group postpartum.

This is the only prospective randomised intervention trial of thyroxine in early pregnancy.

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

Intelligence Quotient (IQ) of children in screen and control groups.

Key secondary outcome(s)

No secondary outcome measures

Completion date

01/06/2010

Eligibility**Key inclusion criteria**

All pregnant women (aged 18 - 45 years) before 16 weeks gestation

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Sex

Female

Key exclusion criteria

1. Twin pregnancy
2. Thyroid treatment (T4 or antithyroid drugs)

Date of first enrolment

01/06/2002

Date of final enrolment

31/05/2006

Locations**Countries of recruitment**

United Kingdom

Wales

Study participating centre

Cardiff University

Cardiff

United Kingdom

CF14 4XN

Sponsor information**Organisation**

Cardiff University (UK)

ROR

<https://ror.org/03kk7td41>

Funder(s)**Funder type**

Charity

Funder Name

Wellcome Trust (UK) (grant ref: GRO65143MA)

Alternative Name(s)**Funding Body Type**

Private sector organisation

Funding Body Subtype

International organizations

Location

United Kingdom

Results and Publications

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	09/02/2012		Yes	No