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Neurodevelopment of babies born to mothers with epilepsy study

Submission date
11/04/2016

Recruitment status
No longer recruiting

Registration date
26/04/2016

Overall study status
Completed

Last Edited
26/04/2016

Condition category
Pregnancy and Childbirth

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims:
Exposure in the womb to certain medications is associated with an increased risk of both physical and developmental problems. Reductions in developmental functioning can have lifelong implications for the child, including poor educational achievement and lower skilled occupational prospects in adult life. Effects on development are not always apparent at birth and problems may go unnoticed for many years after a medication has received its licence. There are methods of investigating adverse effects of exposure to medications in the womb but typically they only look at the physical development of the child and they cover very large regions. Typically, when measuring development the child is assessed in person. This poses financial and time limitations for assessing large numbers of individuals from a large region or entire country. This study seeks to investigate the reliability of using questionnaires filled in by the parents of children known to have been exposed to medications in the womb. If such measures are reliable then they would offer a cost effective way to assess large numbers of children across large regions and would speed up the information which can be collected on medications which are commonly used during pregnancy.

Who can participate?
Pregnant women in their first or second trimester, diagnosed with epilepsy and are either taking antiepileptic medications or not.

What does the study involve?
The study involves interviewing each participant briefly during their pregnancy about their health and background. Once the child is born, details about the child's physical health are taken from hospital records. Each mother is then asked to complete two questionnaires about their child's development when they are a year old and again when they are 2 years old. When the child is 2 years old, they are visited at home by a member of the study team to complete a developmental assessment with their child.

What are the possible benefits and risks of participating?
There may be no direct benefits to participants. However, following the assessment when the child is 2 years old, each parent is provided with brief feedback regarding their child's assessment. This letter will also be copied to their GP and kept on the child's file. If there are any

concerns about specific areas of a child's development, these are discussed with the parent and their GP and Health Visitor.

Where is the study run from?
The study is run by the University of Manchester in collaboration with Central Manchester University Hospitals NHS Foundation Trust and other collaborating hospitals.

When is the study starting and how long is it expected to run for?
July 2014 to March 2019

Who is funding the study?
National Institute for Health Research (UK)

Who is the main contact?
Dr Rebecca Bromley
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Contact information

Type(s)
Public

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Additional identifiers

Protocol serial number
16727

Study information

Scientific Title
Neurodevelopment of Babies Born to Mothers with Epilepsy (NaME): a observational cohort study

Acronym
NaME

Study objectives
1.1. Question: Is the utilisation of parental reporting for neurodevelopmental outcome feasible in large populations of children exposed to teratogens in utero?
1.2. Hypothesis: The utilisation of parental reporting for neurodevelopmental outcome will be feasible in large populations of children exposed to teratogens in utero.
2.1. Question: Is the Ages and Stages Questionnaire (ASQ) or the Vineland Adaptive Behaviour Scales (VABS) a reliable measure of neurodevelopmental impairment in populations prenatally exposed to known and unknown teratogens? Is one method more reliable than the other when considered against the Bayley Scales of Infant and Toddler Development?
2.2. Hypothesis: Parental ratings of neurodevelopment will be reliable in their detection of infants with impaired neurodevelopment. It is anticipated that the VABS is likely to be more reliable than the ASQ.
3.1. Question: Are the ratings made by parents on either the VABS or the ASQ at 12 months predictive of ratings at 24 months of age?
3.2. Hypothesis: Parental ratings of neurodevelopment will predict outcomes at 24 months of age.
4.1. Question: What is the neurodevelopmental outcome of children prenatally exposed to newer AEDs?
4.2. Hypothesis: Prenatal exposure to newer antiepileptic drugs will demonstrate different safety and risk profiles pertaining to the neurodevelopment of the child.

Ethics approval required
Old ethics approval format

Ethics approval(s)
North West - Greater Manchester Central Research Ethics Committee, 22/04/2014, ref: 14/NW/0193

Study design
Observational cohort study

Primary study design
Observational

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Specialty: Reproductive health and childbirth, Primary sub-specialty: Reproductive and sexual medicine; UKCRC code/ Disease:

Interventions
Surveillance for neurodevelopmental teratogenic effects of pharmacological treatment during pregnancy is limited, the consequence of which is that treatment is unlikely to be optimised for maternal or fetal safety. This study aims to investigate the feasibility and reliability of parental reporting methods for the screening of neurodevelopmental outcomes following prenatal exposure to medications across large populations. Antiepileptic drugs (AEDs) provide a means through which to investigate such methods due to the documented outcomes for the older

AEDs. Women with epilepsy, who are in their first or second trimester, will be invited to consent into this follow up study. Demographics and health information will be collected during gestation. When the child is 12 months of age the parent will complete the Ages and Stages Questionnaire (ASQ) and the Vineland Adaptive Behavior Scale (VABS). At 24 months of age the child will be assessed using the Bayley Scales of Infant and Toddler Development (Bayley Scales) and reassessed with the ASQ and VABS. Diagnostic efficiency statistics of sensitivity (percentage of children that are impaired and are classified correctly), specificity (percentage of children who are not impaired and who are classified correctly) and false positive/negative predictive values will be calculated for the parental measures in comparison to the Bayley Scales. The kappa statistic will be calculated to determine level of agreement between measures. This investigation will also provide critical information regarding neurodevelopmental outcome following prenatal exposure to newer AEDS, for which safety remains uncertain. Bayley scores at 24 months will be analysed utilising multiple regression, adjusting for confounding variables, to address this issue.

Intervention Type
Other

Primary outcome(s)
1. Sensitivity and specificity of the Ages and Stages Questionnaire for assessing child development (collected at 12 and 24 months of age)
2. Behaviour and cognitive skills, assessed using Vineland Adaptive Behaviour Scale-II (collected at 12 and 24 months of age)
3. Child development, assessed using Bayley Scales of Infant and Toddler Development-III (collected at 24 months of age)

Key secondary outcome(s))
Child development, assessed using the Bayley Scales of Infant and Toddler Development-III (collected at 24 months of age) across individual antiepileptic drugs treatments.

Completion date
30/03/2019

Eligibility

Key inclusion criteria
1. A diagnosis of epilepsy and either:
1.1. On antiepileptic drug treatment (experimental group)
1.2. Not on treatment (control group)
2. Living within the North West, North East of England or Northern Ireland.
3. Able to provide informed consent
4. In their first or second trimester of pregnancy

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group

Adult

Sex
All

Key exclusion criteria
1. Significant learning disability (defined as not able to live independently).
2. Taking non-AED medications which are known to be teratogenic (e.g. warfarin)
3. Unable to understand written or verbal English (due to the standardised assessments in use)

Date of first enrolment
07/07/2014

Date of final enrolment
31/03/2016

Locations

Countries of recruitment
United Kingdom

England

Northern Ireland

Study participating centre
Central Manchester University Hospitals NHS Foundation Trust (Lead Centre)
Oxford Road
Manchester
United Kingdom
M13 9WL

Study participating centre
Belfast Health and Social Care Trust
Royal Hospitals
Grosvenor Road
Belfast
United Kingdom
BT12 6BA

Study participating centre
Lancashire Teaching Hospitals NHS Foundation Trust
Royal Preston Hospital
Sharoe Green Lane
Preston

United Kingdom
PR2 9HT

Study participating centre
Liverpool Women's Hospital NHS Foundation Trust
Crown Street
Liverpool
United Kingdom
L8 7SS

Study participating centre
Salford Royal NHS Foundation Trust
Stott Lane
Salford
United Kingdom
M6 8HD

Study participating centre
City Hospitals Sunderland NHS Foundation Trust
Sunderland Royal Hospital
Kayll Road
Sunderland
United Kingdom
SR4 7TR

Study participating centre
Newcastle Upon Tyne Hospitals NHS Foundation Trust
Royal Victoria Hospital
Queen Victoria Road
Newcastle Upon Tyne
United Kingdom
NE1 4LP

Study participating centre
South Tees Hospitals NHS Foundation Trust
Marton Road
Middlesbrough
United Kingdom
TS4 3BW

Study participating centre
Walton Centre for Neurology and Neurosurgery NHS Foundation Trust
Lower Lane
Liverpool
United Kingdom
L9 7LJ

Study participating centre
South Tyneside NHS Foundation Trust
South Tyneside District General Hospital
Harton Lane
South Shields
United Kingdom
NE34 0PL

Study participating centre
Northumbria Healthcare NHS Foundation Trust
Rake Lake
North Shields
Tyne and Wear
United Kingdom
NE29 8NH

Study participating centre
University Hospitals of Morecambe Bay NHS Foundation Trust
Lancaster Royal Infirmary
Ashton Road
Lancaster
United Kingdom
LA1 4RP

Study participating centre
Warrington and Halton Hospitals NHS Foundation Trust
Lovely Ln
Warrington
Cheshire
United Kingdom
WA5 1QG

Study participating centre

Countess of Chester Hospital NHS Foundation Trust
The Countess Of Chester Health Park
Liverpool Rd
Chester
Cheshire
United Kingdom
CH2 1UL

Study participating centre
East Lancashire Hospitals NHS Foundation Trust
Royal Blackburn Hospital
Haslingden Rd
Blackburn
United Kingdom
BB2 3HH

Study participating centre
Mid Cheshire Hospitals NHS Foundation Trust
Leighton Hospital
Crewe
Cheshire
United Kingdom
CW1 4QJ

Study participating centre
York Teaching Hospitals NHS Foundation Trust
Wigginton Rd
York
North Yorkshire
United Kingdom
YO31 8HE

Study participating centre
Leeds Teaching Hospitals NHS Foundation Trust
St James Hospital
Beckett Street
Leeds
United Kingdom
LS9 7TF

Study participating centre

Southport and Ormskirk Hospitals NHS Trust
Wigan Rd
Ormskirk
Lancashire
United Kingdom
L39 2AZ

Study participating centre
Harrogate and District Hospitals NHS Trust
Lancaster Park Rd
Harrogate
United Kingdom
HG2 7SX

Study participating centre
County Durham and Darlington NHS Foundation Trust
North Rd
Durham
United Kingdom
DH1 5TW

Sponsor information

Organisation
The University of Manchester

ROR
https://ror.org/027m9bs27

Funder(s)

Funder type
Government

Funder Name
National Institute for Health Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No