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FENOX: Fibroids and Endometriosis Study Oxford – A Study into the Biology of Uterine Fibroids and Endometriosis.

Submission date
02/04/2018

Recruitment status
Recruiting

Registration date
23/04/2018

Overall study status
Ongoing

Last Edited
22/09/2025

Condition category
Other

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

Plain English summary of protocol

Background and study aims
Millions of women suffer from the consequences of endometriosis and uterine fibroids. These include severe pain, abnormal uterine bleeding, infertility and miscarriages. Current treatment is associated with significant side effects and risks. To better understand the underlying mechanisms of these conditions, this prospective study will use biological samples such as blood, saliva, urine, peritoneal fluid and endometrial or fibroid tissue in state-of-the-art biomedical assays together with detailed clinical and intraoperative data from participants.

Who can participate?
Women of reproductive age (18 years until menopause) who are planned to undergo surgery for endometriosis and/or fibroid-associated symptoms, or unrelated gynaecological surgery, will be invited to participate.

What does the study involve?
Once consented, participants complete detailed questionnaires at baseline and then at intervals (6-8 weeks, 6 months, 1 year and yearly, for a total of 5 years) about their symptoms, medications, co-morbidities, and ethnicity. Consenting women will also be asked to donate biological samples such as blood, urine and saliva at baseline and again at a follow-up visit after their surgery, in addition to tissue taken at time of surgery. We will then analyse the differences in tissue and clinical data between patient groups to understand the conditions better and to identify new ways of treatment.

What are the possible benefits and risks of participating?
There are no direct benefits for participants in the study, and there will be no payments made to study participants. The endometrial sampling procedure carries a small additional risk of minor bleeding, uterine perforation (<1%) and an extension to the length of the surgery by 5 minutes.

Where is the study run from?
1. Oxford University Hospitals Trust, Women's Centre (UK)

When is the study starting and how long is it expected to run for?
December 2017 to September 2032

Who is funding the study?
1. Nuffield Department of Women's and Reproductive Health, University of Oxford (UK)
2. Research Grants to the Endometriosis CaRe Centre

Who is the main contact?
Prof Christian M. Becker (Chief Investigator)
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Contact information

Type(s)
Public

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Additional identifiers

Protocol serial number
FENOX Study Protocol 20180102_V1.1

Study information

Scientific Title
FENOX – A study into the biology of uterine fibroids and endometriosis in women of reproductive age who suffer from these conditions compared to women who do not have these conditions

Acronym
FENOX

Study objectives
Millions of women suffer from the consequences of endometriosis and uterine fibroids. These include pelvic and abdominal pain, abnormal uterine bleeding, infertility and miscarriages. In the FENOX study, we aim to improve our understanding of the underlying mechanisms of endometriosis and uterine fibroids and their associated symptoms by means of longitudinal observation and laboratory analyses.

Ethics approval required
Old ethics approval format

Ethics approval(s)
South Central - Oxford B Research Ethics Committee, 31/01/2018, ref: 17/SC/0664.
HRA approval, 28/02/2018;
Trust Management Approval, 20/3/2018

Study design
This is a prospective longitudinal case-control observational study recruiting from 2018 - 2023, with a follow-up until 2028.

Primary study design
Observational

Study type(s)
Quality of life

Health condition(s) or problem(s) studied
Endometriosis, uterine fibroids.

Interventions
Women of reproductive age (18 years until menopause) who are scheduled to undergo surgery for endometriosis and/or fibroid-associated symptoms. Also, women who have been offered surgery as part of their clinical management for abnormal uterine bleeding, pain, infertility or miscarriage or who are undergoing laparoscopic tubal sterilisation will be invited to take part in the study. Women undergoing hysterectomy for benign causes such as abnormal uterine bleeding, pain or gender reassignment will be asked to donate part of their uterus for research.
At the pre-operation visit, research nurses will approach potential participants to discuss the study and provide the participant information sheet. The eligibility will be ascertained versus the exclusion criteria (pregnancy, can't read, history of cancer diagnosis). The participant will be asked to consent.
The participant will be asked to complete a questionnaire (FENOX E or FENOX
UF, depending on the condition).Samples of blood, saliva and urine will be collected pre-operatively.
On the day of the surgery, tissue samples will be collected for analysis.
At an optional follow-up visit (after removal of fibroids), another blood sample and a urine sample will be collected, along with a biopsy of the uterus for analysis.
Follow-up questionnaires will be sent out approximately 6 – 8 weeks, 6 months, 12 months and then yearly for 5 years after surgery to monitor improvements and quality of life.

Intervention Type
Not Specified

Primary outcome(s)
1.To identify the underlying mechanisms of endometriosis and uterine fibroids and their associated symptoms to improve the outcome of affected women. We will use questionnaire data, medical records and sample analysis to investigate the genetic and molecular basis of the pathogenesis and symptoms of endometriosis and uterine fibroids. The collected data and samples will be analysed and compared between endometriosis/fibroid cases, and non-affected controls. This work will be ongoing during the duration of the study. Samples will be taken after

informed consent at the pre-operation appointment, at surgery and at an optionalfollow-up visit. The questionnaires will be completed at baseline, i.e. before surgery, and in intervals afterwards (6 – 8 weeks, 6 months, 12 months and then yearly for 5 years)

Key secondary outcome(s))
1. To identify novel biomarkers of endometriosis. Prospective standardised questionnaires (FENOX E or UF) and samples will be collected according to EPHect (Endometriosis Phenome and Biobanking Harmonisation Project) standards. The correlation of data and endometriosis status will allow us to define novel biomarkers of the disease. Time frame as above.

2. To identify clinical subgroups of endometriosis and uterine fibroids. Clinical notes and questionnaires in combination with sample data will be used to define clinical subgroups of patients. Time frame as above.
3. To understand the genetics underlying these conditions and explore the relevant downstream molecular pathways. The molecular and genetic findings will be compared against public databases of disease-relevant molecular pathways, and in vitro experiments will be carried out to test hypothetical connections between the genetics and manifestation of disease. Time frame as above.

4. To investigate the relation between the presence of fibroids and the symptoms, e.g. abnormal uterine bleeding. The blood vessels and the cells they are made of (endothelial cells) will be compared between tissue from women presenting with fibroids and those without. This work will be ongoing during the duration of the study.

5. To identify novel drug targets. The detailed comparison between tissue from women with fibroids and those without will yield differences in terms of proteins expressed; these can then be tested as targets using known or new drugs. Time frame as above.

6. To develop models of disease progression and prediction. As data accumulate and genetic mechanisms become clear, hypotheses will be formed as to the likely progression of disease. These will be tested against the reports from the follow-up questionnaires. This work will be ongoing during the duration of the study, starting once the first questionnaire sets have been completed.

Completion date
30/09/2032

Eligibility

Key inclusion criteria
1.Participant is willing and able to give informed consent for participation in the study.
2.Female, aged 18 years or above (before menopause).
3.Women undergoing planned surgery (including hysterectomy) for endometriosis- and/or fibroid associated symptoms such as abdominal pain, abnormal uterine bleeding, or for unrelated gynaecological conditions (e.g. fertility investigation or for laparoscopic tubal sterilisation).

Participant type(s)
Patient

Healthy volunteers allowed

No

Age group
Adult

Lower age limit
18 years

Sex
Female

Key exclusion criteria
The participant may not enter the study if ANY of the following apply:
1.Women who are pregnant.
2.Women who are unable to read, or to understand written or spoken English.
3.History of cancer/ diagnosis of current cancer.

Date of first enrolment
01/04/2018

Date of final enrolment
30/09/2030

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Oxford University Hospitals Trust, Women's Centre
John Radcliffe Hospital, Oxford OX3 9DU
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Sponsor information

Organisation
University of Oxford, Clinical Trials and Research Governance Team

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Not defined

Funder Name
Nuffield Department of Women's and Reproductive Health, University of Oxford

Results and Publications

Individual participant data (IPD) sharing plan
Written informed consent will be obtained for access to data regarding past medical history. These data will be entered into the CRF by appropriately GCP trained study staff. Participants' personal data will be stored securely and be accessible by study staff and authorised personnel only. Direct access to the data will be granted to authorised representatives from the Sponsor (Clinical Trials Research Governance, University of Oxford) and host institution for monitoring and/or audit of the study to ensure compliance with regulations. All data will be anonymised and analysed by the research study team. In accordance with the University of Oxford archiving policy, personal data will be stored for 12 months after the study has ended, research data will be archived for 15 years. Electronic data will be anonymised and archived on the Oxford high compliance server, while hard copy data will be archived at an off-site archiving facility.
Each participant will receive a unique study number, which will then be used throughout the study. A study master sheet linking patient identifiable data (name, DOB, hospital and NHS numbers) with the unique study number will be kept and password protected on the University of Oxford's High Compliance server with authorised access and in a file separate from the main study file. Hard copy study documents will be kept in a locked room at each participating centre. Research data will therefore be using non-identifiable data, and all records will be identified only by this study number. All study data will be entered on a desktop computer into a program such as Microsoft EXCEL or Sapphire (Labvantage) using password protection. The participants will be identified by study number in any database. The name and any other identifying details will NOT be included in any electronic file of study data.
Where participants consent, coded genetic data and limited relevant details including, age, gender, information about body habitus, biochemistry etc. can also be made available to academic and industry collaborators and to the National Institute for Health Research (NIHR) Bioresource (http://bioresource.nihr.ac.uk/), a panel of thousands of volunteers, who are willing to be approached to participate in research studies investigating the links between genes, the environment, health and disease.

IPD sharing plan summary
Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No
Participant information sheet	Participant information sheet version 8	11/11/2025	11/11/2025	No	Yes

Protocol file	Study website	09/01/2024	18/03/2024	No	No
Study website		11/11/2025	11/11/2025	No	Yes