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Early detection of women at high risk of developing cancer of the lining of the womb

Submission date
28/03/2016

Recruitment status
No longer recruiting

Registration date
24/03/2017

Overall study status
Completed

Last Edited
16/01/2018

Condition category
Cancer

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

Plain English summary of protocol
Background and study aims
The cancer of the lining of the womb is the fourth most common female cancer in the UK. It is a multi-step disease that starts from accumulation of genetic changes (mutations) in normal womb followed by new growth and change leading to cancer. The pre-cancerous step includes overgrowth of the cells, where cells exhibit visible features of the abnormal growth. These features are described as “atypia”, an early process which may lead to cancer. Atypical abnormal growth can be diagnosed by examining tissue samples under the microscope (histological examination), but often doctors cannot agree on a definite diagnosis. Both underestimation and overestimation of the severity of the lesion are very common and there are no reliable predictors of cancer of the womb up to date. Recent research has shown that genetic analysis can provide more accurate prediction of atypical abnormal growth, whereas also, a genetic characterisation of cancer of the womb has been proposed, but still relatively little is known about genetic changes leading to initiation of atypical abnormal growth of cells. As well, hormonal imbalance detecting oestrogen dominance can be used as early preventative measure against development of cancer of the lining of the womb. Few case-control studies have examined the lifestyle and dietary correlations with the incidence of cancer of lining of the womb, however except for increased fat intake and obesity which shows a consistent positive correlation with the risk of developing cancer, there is insufficient data on lifestyle factors and incidence and its potential implication in terms of prevention of cancer of the lining of the womb. The aim of this study is to create comprehensive molecular analysis of atypical abnormal growth of cells in the lining of the womb against cancer, polyps and normal samples to identify candidate genes involved in the progression of atypical abnormal growth to cancer of the lining of the womb, and to compare findings with lifestyle parameters as well as blood hormones and microscopic examination results.

Who can participate?
Women aged 40 and older who have endometrial polyps and are awaiting surgery.

What does the study involve?
The study involves a comprehensive analysis of endometrial hyperplasia (EH) against endometrial cancer (EC), polyps and normal samples, and compare findings with diet and lifestyle parameters as well as biochemical and histological results. The research identifies

candidate genes involved in the progression of EH to EC. Gene panel for detecting endometrial pre-cancerous disease will be developed. From these a risk prediction model is formed. Combination of lifestyle and diet assessment, biochemical analysis, histology and molecular biology evidence would enable clinical stratification of individuals into high-risk groups. Endometrial tissue samples (biopsies, polyps and resection specimens) and blood samples that are part of the normal clinical procedure are used. Blood samples are analysed for the level of female hormones and, also used, as control normal samples. Genetic information from tissue samples is extracted and analysed against already known cancer biomarkers using specialist equipment. For all enrolled participants, a food frequency and lifestyle questionnaire will be developed and completed, to include information such as dietary habits, BMI, family cancer history and etc.The data from the questionnaire is transformed into datasets and linked to the biochemical, genetic and histological findings, which will form a diagnostic assay.

What are the possible benefits and risks of participating?
Not provided at time of registration.

Where is the study run from?
Portsmouth Hospitals NHS Trust (UK)

When is the study starting and how long is it expected to run for?
June 2015 to June 2020

Who is funding the study?
League of Friends, Portsmouth Hospitals Charity (UK)

Who is the main contact?
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2. Dr Siavash Rahimi (Scientific)

Contact information

Type(s)
Public

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Additional identifiers

Protocol serial number
PHT/2016/65

Study information

Scientific Title
Predicting Risk of Endometrial Cancer: a multivariate prediction model with combination of lifestyle factors, clinical biochemistry, histological and genetic analysis

Acronym
PRECa

Study objectives
The combination of lifestyle and diet assessment, biochemical analysis, histology and molecular biology evidence enables clinical stratification of women, who are at high-risk for development of endometrium cancer. This combination could be early detected.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Portsmouth Hospitals NHS Trust, University of Portsmouth

Study design
Prospective observational study

Primary study design
Observational

Study type(s)
Diagnostic

Health condition(s) or problem(s) studied
Endometrial cancer, endometrial hyperplasia, polyps and normal endometrium

Interventions
The project will involve a comprehensive analysis of endometrial hyperplasia (EH) against endometrial cancer (EC), polyps and normal samples, and compare findings with diet and lifestyle parameters as well as biochemical and histological results. The research will identify candidate genes involved in the progression of EH to EC. Gene panel for detecting endometrial pre-cancerous disease will be developed. From these a risk prediction model will be formed. Combination of lifestyle and diet assessment, biochemical analysis, histology and molecular biology evidence would enable clinical stratification of individuals into high-risk groups.

For the purpose of this study endometrial tissue samples (biopsies, polyps and resection specimens) and blood samples, that are part of the normal clinical procedure, will be used. Blood samples will be analysed for the level of female hormones and, also used, as control normal samples. Genetic information from tissue samples will be extracted and analysed against already known cancer biomarkers using specialist equipment. For all enrolled participants, a food frequency and lifestyle questionnaire will be developed and completed, to include information such as dietary habits, BMI, family cancer history and etc. The data from the questionnaire will be transformed into datasets and linked to the biochemical, genetic and histological findings, which will form a diagnostic assay.

Intervention Type
Mixed

Primary outcome(s)
Lifestyle and diet assessment score, biochemical data, histological grade and genetic data will form a multivariate model. Generated data will be used for statistical modeling, where tests will be performed to determine differences between study cases. In order to determine which combination of tested variables best predicts EC, a stepwise discriminant analysis will be used.

Key secondary outcome(s))
Detection of differences in biochemical, histological and genetic results between studied conditions.

Completion date
15/06/2020

Eligibility

Key inclusion criteria
1. Women seen in Post Menopausal Clinic at Queen Alexandra Hospital
2. Ability to consent
3. Aged 40 years or over
4. Women with endometrial polyps
5. Women with prolapse awaiting surgery
6. Normal up to date smear

7. Normal endometrial sampling at screening
8. Not on prior endocrine treatment
9. No other/second cancer in the present or past

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
Female

Key exclusion criteria
Exclusion criteria as of 21/04/2017:
1. Previous hysterectomy
2. Breast cancer and breast cancer therapy
3. Taking systemic hormone replacement therapy or endocrine treatment

Original exclusion criteria:
1. Previous hysterectomy
2. Breast cancer and breast cancer therapy
3. Congenital/acquired uterine anomalies
4. Pelvic inflammatory disease, previous and active
5. Immunodeficiency or any chronic disease
6. Taking systemic hormone replacement therapy or endocrine treatment

Date of first enrolment
03/10/2016

Date of final enrolment
03/10/2019

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Portsmouth Hospitals NHS Trust
Queen Alexandra Hospital
Southwick Hill Road
Cosham
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Sponsor information

Organisation
Portsmouth Hospitals NHS Trust

ROR
https://ror.org/009fk3b63

Funder(s)

Funder type
Charity

Funder Name
League of Friends, Portsmouth Hospitals Charity

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Stored in repository