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# AFI-targeted confocal endomicroscopy in Barrett's oesophagus

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| **Submission date**<br>12/06/2017 | **Recruitment status**<br>No longer recruiting | [ ] Prospectively registered<br>[ ] Protocol<br>[ ] Statistical analysis plan<br>[ ] Results<br>[ ] Individual participant data<br>[ ] Record updated in last year |
| **Registration date**<br>25/07/2017 | **Overall study status**<br>Completed | |
| **Last Edited**<br>23/09/2022 | **Condition category**<br>Cancer | |

**Plain English summary of protocol**
https://www.cancerresearchuk.org/about-cancer/find-a-clinical-trial/a-study-looking-at-a-new-test-to-find-cell-changes-for-people-with-barretts-oesophagus-ace-b

## Contact information

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# Additional identifiers

### Protocol serial number
33291

# Study information

### Scientific Title
Cross-over randomised study to evaluate the combination of autofluorescence imaging and confocal laser endomicroscopy to diagnose dysplasia in Barrett’s oesophagus

### Study objectives
The aim of this study is to test a combination of enhanced endoscopic imaging (autofluorescence imaging and confocal laser endomicroscopy) in combination to molecular tests on tissue samples to allow diagnosis of dysplasia and early cancer in Barrett’s oesophagus.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
East of England - Cambridgeshire and Hertfordshire Research Ethic Committee, 05/04/2017, ref: 16/EE/0554

### Study design
Randomised; Interventional; Design type: Diagnosis, Imaging

### Primary study design
Interventional

### Study type(s)
Treatment

### Health condition(s) or problem(s) studied
Barrett's oesophagus

### Interventions
As part of this study, patients referred with flat Barrett’s oesophagus without evidence of visible lesions receive two endoscopies in a randomised order (standard procedure and experimental procedure).

Standard procedure: This includes a standard endoscopy with multiple random biopsies according to the Seattle protocol (targeted biopsies on visible lesions + 4 biopsies every 2 cm within the Barrett's oesophagus). The endoscopist is only be allowed to use white light high resolution endoscopy.

Experimental procedure: This procedure uses multimodal imaging. The endoscopist uses autofluorescence imaging (AFI) to identify area at risk of dysplasia. These are analysed with Probed-Based Confocal Laser Endomicrosopy (pCLE) to make a real-time optical diagnosis (Barrett's with or without dysplasia). Two targeted biopsies stored in formalin are then taken for histology and biomarkers from each AFI targeted location. In patients with no AFI positive areas one random location are used for pCLE analysis and molecular biomarkers for every 5cm of maximum extent of the Barrett's. The biopsies on AFI targeted areas processed for standard histology are used for clinical purpose as well and are part of the final histologic diagnosis and potentially inform treatment as per clinical guidelines.

In addition to histological diagnosis, the biopsies taken during the experimental procedure are tested for a panel of 3 molecular biomarkers.

After the first study procedure, the patient arecheduled for a second endoscopy 8-12 weeks after with the alternative protocol.

With the second procedure the patient completes the study and referred for standard clinical management based on the histopathological result of the biopsies taken during the two study procedures.

## Intervention Type
Other

## Primary outcome(s)
The diagnostic accuracy for any grade of dysplasia of pCLE is measured comparing real-time optical diagnosis of dysplasia by pCLE on AFI-positive areas (experimental procedure) with the gold standard histologic diagnosis (overall pathological diagnosis from experimental and standard procedures).

## Key secondary outcome(s))
1. Added value of the use of molecular biomarkers to the optical biopsy for the diagnosis of any grade of dysplasia. This will be measured by testing molecular biomarkers on tissue biopsies. The biomarkers result will be integrated with that of the optical diagnosis and the results will be compared with that of the gold standard histologic diagnosis.
2. Diagnostic accuracy for any grade of dysplasia of a panel of biomarkers performed on AFI-targeted biopsies. This will be measured by testing molecular biomarkers on tissue biopsies and comparing the results with the gold standard histologic diagnosis
3. Time to perform AFI-targeted pCLE vs gold standard (Seattle protocol). This will be measured as time from the beginning to the end of each endoscopic procedure. Standard and experimental procedure time will be compared.
4. Costs to perform AFI-targeted pCLE +/- biomarkers and conventional endoscopic surveillance with Seattle protocol. This will be measured by the costs of a single use of pCLE probe and laboratory costs of molecular biomarkers for the experimental procedure and costs for processing biopsies and costs of pathology time for histologic diagnosis for the standard procedure.
5. Patient-reported experience and outcome measures, including acceptability and anxiety levels. This outcome will be measured using 2 validated questionnaires: a 10-point visual analogue scale (VAS, 0 = worst and 10 = best), filled by participants before and after each procedure and 6-item state-trait anxiety inventory (STAI -6), completed after each procedure.

## Completion date

29/02/2020

# Eligibility

### Key inclusion criteria
1. Able to read, comprehend, and complete the consent form
2. Aged ≥18
3. Diagnosed with dysplastic or non-dysplastic BO at least 2 cm in length if circumferential (C2) or 3 cm if not circumferential (M3)

### Participant type(s)
Patient

### Healthy volunteers allowed
No

### Age group
Adult

### Lower age limit
18 years

### Sex
All

### Total final enrolment
146

### Key exclusion criteria
1. Oesophagitis (Los Angeles grade ≥B)
2. Previous oesophagectomy or known oesophageal abnormality (e.g. fistula or severe oesophageal stricture)
3. Previous evidence of oesophageal adenocarcinoma
4. Previous history of endoscopically visible BO-related neoplasia
5. Known allergy to fluorescein
6. Severe or uncontrolled asthma
7. Coagulopathy or anticoagulant/antiplatelet therapy for high risk conditions
8. Active or severe cardiopulmonary disease or decompensated liver disease
9. Pacemaker or other intra-cardiac electric device

### Date of first enrolment
02/05/2017

### Date of final enrolment
31/12/2019

# Locations

### Countries of recruitment
United Kingdom

England

**Study participating centre**
**Cambridge University Hospital**
Hills Road
Cambridge
United Kingdom
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**Study participating centre**
**Nottingham University Hospital**
The Queen's Medical Centre Campus
Derby Road
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# Sponsor information

**Organisation**
Cambridge University Hospitals NHS Foundation Trust

**ROR**
https://ror.org/04v54gj93

# Funder(s)

**Funder type**
Charity

**Funder Name**
Cancer Research UK

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

**Funding Body Type**
Private sector organisation

**Funding Body Subtype**

Other non-profit organizations

### Location
United Kingdom

# Results and Publications

### Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from from the Chief Investigator, Dr Massimiliano di Pietro [md460@mrc-cu.cam.ac.uk ]

### 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 |
| Participant information sheet | Participant information sheet | 11/11/2025 | 11/11/2025 | No | Yes |
| Plain English results | | | 23/09/2022 | No | Yes |