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BEST4 Surveillance Trial: Using the capsule sponge test in surveillance of Barrett's Oesophagus.

Submission date
24/10/2023

Recruitment status
No longer recruiting

Registration date
23/11/2023

Overall study status
Ongoing

Last Edited
10/09/2025

Condition category
Digestive System

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

Plain English summary of protocol

https://www.cancerresearchuk.org/about-cancer/find-a-clinical-trial/a-trial-looking-at-the-capsule-sponge-test-to-monitor-barretts-oesophagus-best4-surveillance
https://www.cancerresearchuk.org/about-cancer/find-a-clinical-trial/a-trial-looking-capsule-sponge-test-spot-health-problems-oesophagus-best4-screening

Background and study aims
This trial aims to assess whether a capsule sponge device together with a laboratory biomarker panel can be used as part of a surveillance strategy for people with non-dysplastic Barrett's oesophagus (NDBO). Using a non-endoscopic device as part of a BO surveillance strategy could be an attractive option as it can be performed in an office setting making it more convenient for patients; it is quick and easy to perform without requiring sedation; the sponge collects a sample from across the oesophagus compared to endoscopic biopsies; it may also have cost benefits for the NHS.

Who can participate?
We will invite people from participating hospitals who:
• are having regular endoscopies (surveillance) for Barrett's oesophagus, OR
• have been recently diagnosed with Barrett's oesophagus after having the sponge test as part of the BEST4 Screening trial

What does the study involve?
Taking part involves having sponge tests along with your regular endoscopies. The number of tests depends on the first capsule sponge and endoscopy results. Most people will be asked to come back only once over the 3 years of the trial.
Before taking part, each person will have time to discuss the trial in detail and will be asked to sign a consent form. People who have not been part of the BEST4 Screening Trial, will be invited to have the sponge test before their next surveillance endoscopy. The trial team will arrange this appointment at your local hospital on the same day as your endoscopy. People who took part in the BEST4 Screening Trial won't need these first tests. We will use the results from the Screening trial tests instead.

Your local care team will review your endoscopy and sponge test results together to decide when to invite you back. This will be based on the sponge test and endoscopy results, as well as other factors like age and sex. The results will be explained to you by your local care team after each test.
Everyone will be invited to return for both tests in 3 years. Some people may also be offered a repeat endoscopy in 3 months' time, and/or a sponge test in 18 months' time. Therefore, by taking part in this trial you may be invited to return for up to 2 additional trial visits for endoscopy compared to your usual standard of care.

If at any point dysplasia or early cancer is found on endoscopy, all trial tests will stop. You will be offered all recommended care by your local care team, including any treatment if needed. You will receive all care you would usually receive while taking part in this trial.
After the trial, your usual surveillance will continue (endoscopy only). However, if this trial is successful the NHS may start offering the capsule sponge for Barrett's surveillance in the future.
If your sponge sample does not contain enough cells to give a clear result, we may invite you to have a repeat test.

What are the possible benefits and risks of participating?
This trial could help improve surveillance for people with Barrett's oesophagus in the future. For some people, this could mean fewer endoscopies and hospital visits. By taking part, you are making that possible.
The sponge test is not painful, and most people easily swallow it. A mild sore throat is the most common complaint after having the sponge test. Any discomfort after the sponge test will likely be less than what you may have felt after an endoscopy.
There is a very small risk (less than 1 in 1,000) that the sponge comes off the thread in your stomach or the nurse is unable to remove it. If this happens, the sponge will be removed during an arranged endoscopy.
There is also a very small risk of bleeding with both tests. If this happens, you will be checked by your doctor or nurse. This is likely to stop quickly on its own. If needed, they will arrange an endoscopy right away to stop the bleeding, if you are not having it straightaway after the sponge test as part of the trial. Endoscopies will follow standard NHS procedures. You will be able to discuss the risks involved in having an endoscopy with the clinical team at your appointment.

Where is the study run from?
University of Cambridge (UK)

When is the study starting and how long is it expected to run for?
October 2022 to June 2029

Who is funding the study?
Cancer Research UK
National Institute for Health and Care Research (NIHR) Health Technology Assessment (HTA) (UK).

Who is the main contact?
Dr Massimiliano di Pietro, md460@cam.ac.uk

Contact information

Type(s)

Scientific, Principal investigator

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Integrated Research Application System (IRAS)
331813

Central Portfolio Management System (CPMS)
57605

Protocol serial number
SEBSTF-2021\100036

Study information

Scientific Title
Barrett’s oESophagus Trial 4 (BEST4): A Prospective Cohort trial for the Surveillance of Barrett’s Oesophagus using a capsule sponge test and biomarker panel

Acronym
BEST4 Surveillance

Study objectives
This trial aims to assess whether using a capsule sponge device together with a laboratory biomarker panel can be used as part of a surveillance strategy for people with non-dysplastic Barrett's oesophagus (NDBO).

Ethics approval required
Ethics approval required

Ethics approval(s)

approved 19/10/2023, West Midlands - South Birmingham Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 207 104 8386; southbirmingham.rec@hra.nhs.uk), ref: 23/WM/0210

Study design
Interventional non-randomized

Primary study design
Interventional

Study type(s)
Screening

Health condition(s) or problem(s) studied
non-dysplastic Barrett's oesophagus

Interventions
- (Cohort 1) People who have participated in the BEST4 Screening Trial and have subsequently been diagnosed with NDBO will be invited by their local hospital team. The research team will flag potentially eligible participants via the BEST4 Database and the local hospital team will contact people via phone, email or letter with information about the trial.
- (Cohort 2) People with a known diagnosis of NDBO who are presenting for routine endoscopic surveillance will be invited by their local hospital team. The hospital team will search hospital records for potentially eligible people and will contact them via phone, email or letter with information about the trial.

People who choose to take part will have the opportunity to speak with their hospital team or the BEST4 research team with any questions they may have. Those who consent to participate in the trial will receive a capsule sponge test in addition to their standard of care endoscopies as part of their routine BO surveillance during a 3 year period. The number of visits participants will be invited to will depend on the risk stratification at baseline (as summarised below)

Summary of Procedures and Visits:

Baseline Visit: Cohort 1 participants will have recently received the capsule sponge and had a subsequent endoscopy as part of their participation in the BEST4 Screening Trial and provided consent for this data to be utilised within the BEST4 Programme. As such, we will use the capsule sponge and endoscopy results from the Screening Trial for baseline assessments for Cohort 1 to minimise participant procedures and appointments. For Cohort 2 participants, they will receive the capsule sponge test prior to their next standard of care endoscopy as part of their scheduled routine BO surveillance endoscopy at baseline.

Risk Stratification: All participants will be allocated into risk groups using a biomarker panel (clinical factors and markers applied to cells retrieved from their baseline capsule sponge procedure). Based on these results, participants will be assigned into low, moderate or high-risk groups. The frequency of follow-up will depend on this risk stratification.

Follow-up Visits:
Participants in low-risk group will be invited back for a capsule sponge at their next surveillance endoscopy at 36 months and exit the trial.

Participants in the moderate risk group will be invited back for a capsule sponge at 18 months time and then a capsule sponge before their next surveillance endoscopy at 36 months and exit the trial.
Participants in the high risk group will be invited back for a research endoscopy in 3 months time. This is because potential cell changes were found in the capsule sponge but not observed in the baseline endoscopy taken on the same day. If no dysplasia is found on the 3 month endoscopy, participants will remain in the trial attending at 18 months (for capsule sponge only) and again at 36 months (for capsule sponge before their routine surveillance endoscopy) and exit the trial.
Note, at 18 month visits, if the capsule sponge tests biomarker positive for p53 or atypia, the participant will be recommended to return for an endoscopy as soon as possible.
At any point, if any endoscopy biopsies are reported with any findings other than NDBO i.e. dysplasia or OAC, they will be clinically managed according to NHS current standard of care guidelines. Local hospital teams will be responsible for assessing whether participants are able to continue actively participating in the trial in parallel or if the participant should exit the trial for treatment.
Local hospital teams will be responsible for reporting and explaining all capsule sponge results to participants together with endoscopy results (if applicable).

Samples & Laboratory tests:
Capsule sponge samples collected during the trial will be sent to a central laboratory (Cyted Ltd) to look for specific markers such as TFF3, p53 and atypia. Results of the capsule sponge test will be shared directly with the participants local hospital team via the BEST4 database.

We will seek permission to keep leftover capsule sponge samples (coded with personal details removed) for long term storage at the University of Cambridge for future research. We will also seek permission from participants to run tests on these samples looking at the whole DNA sequence during the trial. These tests are for research purposes only and will not be shared with participants or their care team. The samples may be shared in future with research from academic, non-profit and for-profit organisations in the UK and abroad.

We will also seek permission to access samples and/or images of any endoscopy and relating histopathology procedures from participating sites. These will be sent to Cyted Ltd for central pathology review by experts and returned to sites. Images of samples may be stored, with participant details removed in order to facilitate pathology reviews.

Data Usage & Long Term Follow Up:

We will seek permission from participants to collect health information from hospital records and NHS England (National Cancer Registration Service) in order to run this trial. This will include information held about appointments, test results, medications, conditions and treatment. We will seek permission to collect long term follow up data from NCRAS for participants for up to 12 years from the start date of the trial. To find this information, we will use participant personal details (name, date of birth and NHS number).

Intervention Type
Device

Phase
Not Applicable

Drug/device/biological/vaccine name(s)

capsule sponge device

Primary outcome(s)
1. Risk of Barrett's neoplasia (Pilonis risk score) assessed using a biomarker panel from the baseline capsule sponge (comprising p53 and atypia) together with clinical characteristics (age, sex, length of Barrett's).
2. Diagnosis of prevalent Barrett's oesophagus, ascertained from the baseline endoscopy.
3. Diagnosis of incident Barrett's oesophagus, ascertained from follow-up endoscopy during the 3 year study period.

Key secondary outcome(s))
1. Diagnosis of prevalent Barrett's neoplasia, high grade dysplasia or oesophageal adenocarcinoma, ascertained from the baseline endoscopy.
2. Diagnosis of incident Barrett's neoplasia, high grade dysplasia or oesophageal adenocarcinoma, ascertained from follow-up endoscopy (3m, 18m or 36m) during the 3 year study period.
3. Capsule sponge sample assessed as inadequate (at baseline, 18m or 36m) during the 3 year study period.
4. Presence of atypia, atypia of uncertain significance or aberrant p53 on capsule sponge samples (at baseline, 18m or 36m) during the 3 year study period.
5. Diagnosis of incident oesophageal adenocarcinoma, years 4-12, to be obtained from National Cancer Registration and Analysis Service (NCRAS) data.
6. Stage of diagnosis with incident oesophageal adenocarcinoma will be obtained from participants medical records during the 3 year study period and from National Cancer Registration and Analysis Service (NCRAS) data for years 4-12.
7. Deaths from oesophageal adenocarcinoma will be obtained from participants medical records during the 3 year study period and from National Cancer Registration and Analysis Service (NCRAS) data for years 4-12.
8. Endoscopic treatment for either dysplastic Barrett's oesophagus or intramucosal oesophageal adenocarcinoma over 12 years (from the start of the study), will be identified from National Cancer Registration and Analysis Service (NCRAS) data.

Completion date
30/06/2029

Eligibility

Key inclusion criteria
Cohort1
Have participated in the BEST4 Screening study where;TFF3 positive on capsule sponge and as part of confirmatory endoscopy at participating secondary care site were diagnosed with NDBO defined as endoscopic evidence of BO at least 2cm (Prague C> = 0 and M> = 2) and intestinal metaplasia with no dysplasia in biopsies taken according to the Seattle protocol.

OR

Cohort 2
1. Be aged > = 18years
2. Have a known diagnosis of NDBO, defined as endoscopic evidence of BO at least 2 cm (Prague

C> = 0 and M> = 2) and intestinal metaplasia with no dysplasia in biopsies taken at the previous endoscopy
3. Be presenting for routine endoscopic surveillance at a participating secondary care site.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
1. Recorded high grade dysplasia on last endoscopy (note, low grade dysplasia or indefinite for dysplasia previous to last endoscopy is not an exclusion)
2. Recorded diagnosis of an oro-pharynx, oesophageal or gastro-oesophageal tumour, or symptoms of dysphagia (food sticking)
3. Received prior endoscopic (photodynamic therapy, endoscopic resection or radiofrequency ablation) or surgical intervention to the oesophagus (note, this does not include previous fundoplication treatment)
4. Recorded oesophageal varices, cirrhosis of the liver (including compensated Child A cirrhosis)
5. Unable to follow device anti-coagulation medication guidance
6. Difficulty in swallowing due to a known cerebrovascular accident or neurological disorder
7. Known pregnancy
8. Lack capacity to provide informed consent

Date of first enrolment
02/01/2024

Date of final enrolment
31/12/2025

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Cambridge University Hospitals NHS Foundation Trust
Cambridge Biomedical Campus

Hills Road
Cambridge
United Kingdom
CB2 0QQ

Sponsor information

Organisation
Cambridge University Hospitals NHS Foundation Trust & The University of Cambridge

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 data collected during the trial will be suitable for data sharing once all the data collected has been quality control checked. De-identified data will be stored in conventional formats for data sharing and will be shared in line with the policies of the Joint Sponsors, the Trial Funders and the current regulatory requirements. No participant identifiable data will be shared. Only fully de-identified data will be passed to the public domain (i.e. on an open access data repository /journal) once sufficient validation has been conducted, and meaningful analysis and publication is complete.

IPD sharing plan summary

Stored in non-publicly available repository, Published as a supplement to the results publication

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Study website	Study website	11/11/2025	11/11/2025	No	Yes