

A randomised controlled trial comparing surgery with watchful waiting for preventing recurrent symptoms and complications in adults with uncomplicated symptomatic gallstones

Submission date 27/05/2016	Recruitment status No longer recruiting	☒ Prospectively registered ☒ Protocol
Registration date 27/05/2016	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 10/06/2026	Condition category Digestive System	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Gallstones are common, especially in women, but in many people they do not cause any symptoms. About one in three people with gallstones develop symptoms (symptomatic). Symptoms usually include a severe pain in the upper right-hand side of the abdomen (known as biliary colic), and sometimes nausea and vomiting. At times the pain is accompanied by inflammation of the gallbladder (cholecystitis). Once gallstones start giving symptoms, painkillers, anti-inflammatory medicines and antibiotics are usually prescribed initially and surgery is advised to medically fit patients. Surgery to remove the gallbladder, known as cholecystectomy, is the most common way to treat biliary pain or cholecystitis due to gallstones. About 70,000 cholecystectomies are performed every year in the UK, with significant costs for the NHS. In the UK, surgery is commonly offered to people who present at secondary care with pain or cholecystitis due to gallstones. However, it is known that some patients do not have any more symptoms after the initial episode of pain and that surgery may not be necessary. A policy of conservative management (painkillers/antibiotics and lifestyle advice) could therefore be appropriate in this group of people. A review of current evidence suggested that conservative management may provide a more efficient use of NHS resources. There were, however, great uncertainties in the data, with only two small studies run in Norway. There is a need for a definitive study to address these uncertainties. The aim of this study is to find out whether there are any differences between conservative management and cholecystectomy in terms of patient quality of life and cost-effectiveness.

Who can participate?

Adult patients with symptomatic gallstone disease

What does the study involve?

Participants randomly allocated to either receive a surgical procedure to remove the gallbladder or to receive conservative management. Apart from treatment allocation and measurement of study outcomes, participants receive standard NHS follow up for at least 18 months. The main

outcome of the study is the effect of the two policies on the participants' quality of life. We assess this using a questionnaire. To assess any longer term benefits of either policy we use a mathematical model to give a prediction of quality of life over each participant's lifetime. We use the measurements we collect and the model to work out whether gall bladder removal is worthwhile to the NHS in terms of balancing any benefit to people's health against the added costs (cost-effectiveness).

What are the possible benefits and risks of participating?

Patients receive the same health care whether or not they choose to participate in the study. By taking part, they will be directly helping us to inform the future treatment of people with uncomplicated gallstones. The results of this study will help plan effective services offered by the NHS in the future. Risks and complications are possible from both surgical treatment and "watchful waiting" and participation in this study should not increase those risks. There are risks associated with surgical procedures and anaesthetics.

Where is the study run from?

1. NHS Grampian (UK)
2. Taunton and Somerset NHS Foundation Trust (UK)
3. Nottingham University Hospital NHS Trust (UK)

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

April 2016 to December 2021

Who is funding the study?

Health Technology Assessment Programme (UK)

Who is the main contact?

Karen Innes

kareninnes@abdn.ac.uk

Contact information

Type(s)

Public

Contact name

Miss Karen Innes

Contact details

CHaRT

HSRU

3rd Floor Health Sciences Building

University of Aberdeen

Foresterhill

Aberdeen

United Kingdom

AB25 2ZD

+44 (0)1224 438089

kareninnes@abdn.ac.uk

Additional identifiers

Protocol serial number

Version 2.0, 20/05/2016; HTA 14/192/71

Study information

Scientific Title

A randomised controlled trial comparing laparoscopic cholecystectomy with observation /conservative management for preventing recurrent symptoms and complications in adults with uncomplicated symptomatic gallstones

Acronym

C-Gall

Study objectives

Is there any difference between observation/conservative management and cholecystectomy in terms of participant quality of life and cost-effectiveness in terms of incremental cost per QALY?

More details can be found at: <http://www.nets.nihr.ac.uk/projects/hta/1419271>

Ethics approval required

Old ethics approval format

Ethics approval(s)

North of Scotland Research Ethics Service (Committee 2), 23/05/2016, ref: 16/NS/0053

Primary study design

Interventional

Study design

Pragmatic multi-centre parallel-group patient randomized superiority trial (with internal pilot phase)

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Gallstones

Interventions

1. Laparoscopic cholecystectomy: the current standard surgical procedure for the management of symptomatic gallstone disease. The gall bladder is removed with the stones within it using keyhole techniques (laparoscopy). The procedure is undertaken under a general anaesthetic. It usually involves three to four small incisions in the abdomen, which allow the surgeon to dissect the gallbladder from its attachments and safely divide the key anatomical structures (the cystic duct and artery) that link it to the biliary tree. The gallbladder is then separated from the under surface of the liver. Usually the gallbladder (containing the stones) is removed within a retrieval

bag via one of the small incisions. The operation takes between 45 and 120 minutes, many patients are admitted for one night, although day case laparoscopic cholecystectomy is safely undertaken in an otherwise fit patients with appropriate social support.

2. Observation/conservative management: observation/conservative management in the context of gallstone disease involves the prescription of analgesics to relieve the biliary pain. Typical therapy includes paracetamol, antispasmodics (e.g. Buscopan), nonsteroidal anti-inflammatory drugs (NSAIDs) (e.g. ibuprofen etc), narcotic analgesics (e.g. opiates) together with generic lifestyle advice. In the longer term, conservative management also may involve these strategies for symptom management if required, as well as advice to eat a healthy diet with regular meals (<http://www.nhs.uk/Conditions/Gallstones/Pages/Treatment.aspx>). For the purpose of this trial a standard protocol for conservative management will be agreed with the PPI group and used in all centres. Safety advice for patients in the observation/conservative management group will be aligned with the current advice given via the NHS choice website (www.nhs.uk).

Intervention Type

Procedure/Surgery

Primary outcome(s)

The primary patient outcome measure will be quality of life as measured by area under the curve (AUC) at up to 18 months post-randomisation using the SF-36 bodily pain domain (AUC measures at 3, 9 and 18 months).

The primary economic outcome measure will be incremental cost per QALY.

Key secondary outcome(s)

Current secondary outcome measures as of 04/07/2023:

Measured at baseline, 3, 9, 12, 18 and 24 months:

1. Condition-specific quality of life (CSQ – The Otago gallstone condition-specific questionnaire)
2. SF-36 domains (excluding bodily pain domain) complications
3. Need for further treatment
4. Persistent symptoms
5. Healthcare resource use
6. Costs

The AUC at up to 24 months post-randomisation for the SF-36 bodily pain domain will be reported.

In addition, routinely collected national data on further surgery will be sought in the future to update longer-term estimates of cost-effectiveness.

Previous secondary outcome measures as of 10/09/2021:

Measured at baseline, 3, 9, 12 and 18 months:

1. Condition-specific quality of life (CSQ – The Otago gallstone condition-specific questionnaire)
2. SF-36 domains (excluding bodily pain domain) complications
3. Need for further treatment
4. Persistent symptoms
5. Healthcare resource use
6. Costs

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Completion date

01/12/2021

Eligibility

Key inclusion criteria

All adult patients with confirmed gallstones electively referred to a secondary care setting for consultation.

Clinical diagnosis of gallstone disease will be confirmed by imaging. Transabdominal ultrasonography is the standard imaging technique for the diagnosis of gallbladder stones, but diagnosis by any imaging technique is acceptable.

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Total final enrolment

436

Key exclusion criteria

1. Unable to consent
2. ASA III and above
3. Pregnancy
4. Previous open major upper abdominal surgery

5. Gallstones in common bile duct or evidence of previous choledocholithiasis
6. A history of acute pancreatitis
7. Abnormal liver function tests (with the exception of GGT <90u/L)
8. Evidence of empyema of the gallbladder
9. Perforated gallbladder
10. Haemolytic disease

Date of first enrolment

01/09/2016

Date of final enrolment

01/09/2019

Locations

Countries of recruitment

United Kingdom

England

Scotland

Wales

Study participating centre

NHS Grampian

Department of Surgery
Aberdeen Royal Infirmary
Foresterhill
Aberdeen
Scotland
AB25 2ZN

Study participating centre

Taunton and Somerset NHS Foundation Trust

Department of Surgery
Musgrove Park Hospital
Taunton
England
TA1 5DA

Study participating centre

Nottingham University Hospital NHS Trust

Department of Surgery
Nottingham

England
NG7 2UH

Study participating centre

Royal Free Hospital

Pond Street

London

England

NW3 2QG

Study participating centre

Queen Elizabeth University Hospital

1345 Govan Rd

Glasgow

Scotland

G51 4TF

Study participating centre

Royal Gwent Hospital

Cardiff Road

Newport

Wales

NP20 2UB

Study participating centre

Coventry University Hospital

Clifford Bridge Road

Coventry

England

CV2 2DX

Study participating centre

North Tees University Hospital

Hardwick Road

Hardwick

Stockton-on-Tees

England

TS19 8PE

Study participating centre
Plymouth Hospitals NHS Trust
Derriford Road
Cownhill
Plymouth
England
PL6 8DH

Study participating centre
University Hospital Aintree NHS Trust
Lower Lane
Liverpool
England
L9 7AL

Study participating centre
Ninewells Hospital and Medical School
-
Dundee
Scotland
DD1 9SY

Study participating centre
Royal Liverpool University Hospital
Prescot Road
Liverpool
England
L7 8XP

Study participating centre
Borders General Hospital
-
Melrose
Scotland
TD6 9BS

Study participating centre
University Hospital North Durham
-

Durham
England
DH1 5TF

Study participating centre
Yeovil District Hospital
Higher Kingston
Yeovil
England
BA21 4AT

Study participating centre
Queen Elizabeth Hospital
General Surgery Research
North Block, 4th Floor West
ITM, Heritage Building
Birmingham
England
B15 2TH

Study participating centre
University Hospital of Wales
Heath Park
Cardiff
Wales
CF14 4XW

Study participating centre
Bedford Hospital NHS Trust
RDI Department
King's Place
Britannia Road
Bedford
England
MK42 9DJ

Study participating centre
Sandwell Medical Research Unit
Sandwell Hospital
West Bromwich
Sandwell

England
B71 4HJ

Study participating centre
Birmingham Heartlands Hospital
Bordesley Green East
Birmingham
England
B9 5SS

Sponsor information

Organisation
University of Aberdeen

ROR
<https://ror.org/016476m91>

Organisation
Grampian Health Board

Funder(s)

Funder type
Government

Funder Name
Health Technology Assessment Programme

Alternative Name(s)
NIHR Health Technology Assessment Programme, Health Technology Assessment (HTA), HTA

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during the current study will be available upon reasonable request from the Chief Investigator Irfan Ahmed (i.ahmed@abdn.ac.uk) after the publication of the current study.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		06/12/2023	18/12/2023	Yes	No
Results article		01/06/2024	01/07/2024	Yes	No
Protocol article		25/03/2021	29/03/2021	Yes	No
HRA research summary			28/06/2023	No	No
Other publications	Development of a core outcome set for the study	16/05/2022	10/06/2026	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes