Randomised controlled trial comparing the clinical and cost-effectiveness of various washout policies versus no washout policy in preventing catheter-associated complications in adults living with long-term catheters

Submission date 04/11/2019	Recruitment status Stopped	[X] Prospectively registered		
		[X] Protocol		
Registration date	Overall study status Stopped Condition category Nervous System Diseases	Statistical analysis plan		
06/11/2019		[X] Results		
Last Edited		Individual participant data		
08/04/2025		Record updated in last year		

Plain English summary of protocol

Background and study aims

Urinary catheters are soft tubes put into the bladder to drain and then collect urine. In the UK, an average of 1 in 1000 people use long-term indwelling catheters. People using these catheters can experience complications, like blockages (where the urine does not drain into the catheter bag properly), urinary infections, pain, and a type of incontinence called catheter bypass. These complications can affect a person's quality of life. They may also mean more emergency visits with nurses and GPs. Research shows that people consider blockage to be one of the most troubling aspects of using catheters over a long period. In current standard catheter care, catheter blockages are dealt with by either changing the catheter more often and/or using catheter washout liquids to washout the catheter. Some people are advised to do a catheter washout every week to try to reduce blockages. Others are not. The difference is because at present, there is no clear evidence to show whether doing regular washouts helps avoid blockages. People doing washouts also use different solutions. One is a weak salty (saline) solution, and the other is a citric mix, more like weak lemon juice. Both solutions are used in the NHS but it is not known which works best. The aim of this study is to find out the best way to reduce the number of blockages that can happen in people who have long-term indwelling catheters to find out if washing out the catheter every week using catheter washout liquids reduces catheter blockages and other problems like urinary incontinence or urinary tract infections.

Who can participate?

Adult men and women who have been using a catheter for \geq 28 days and for whom there is no plan for discontinuation of catheter use at the time of recruitment, who are able to or has someone who can do catheter washouts for them.

What does the study involve?

Participants are randomly allocated to one of three groups for 24 months:

- 1. Weekly normal saline catheter washouts plus standard care
- 2. Weekly acidic (citric) catheter washouts plus standard care
- 3. Standard care only (i.e. no catheter washouts)

Participants are given a special calendar to record any problems with their catheter. They are contacted each month by a member of the research team who asks about any catheter-related problems they may have had. Every six months, participants are asked to complete a questionnaire about their quality of life and satisfaction with treatment.

What are the possible benefits and risks of participating?

Participants will receive the same level of care from their healthcare team whether or not they take part in the study. Participants may not benefit personally from taking part, but will be directly helping us to improve the care of patients with a long-term catheter in the future. The washout solutions used in the study are already being used in the NHS. There may be a possible increase in the risk of urine infection when doing regular catheter washouts. The researchers will monitor this closely within the study and will ask participants about urine infections during every follow-up in the study. There are some side effects from the long-term use of catheters but the researchers do not think that the risk will be increased by introducing regular washouts.

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

When is the study starting and how long is it expected to run for? October 2019 to September 2023

Who is funding the study?
National Institute for Health Research (NIHR) (UK)

Who is the main contact? Dr Lynda Constable l.constable@abdn.ac.uk

Study website

https://w3.abdn.ac.uk/hsru/CatheterII

Contact information

Type(s)

Scientific

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Additional identifiers

EudraCT/CTIS number

Nil known

IRAS number

259559

ClinicalTrials.gov number

Nil known

Secondary identifying numbers

CPMS 41284, IRAS 259559

Study information

Scientific Title

Randomised controlled trial comparing the clinical and cost-effectiveness of various washout policies versus no washout policy in preventing catheter-associated complications in adults living with long-term catheters

Acronym

CATHETER II

Study objectives

In the UK, it is estimated that approximately 1 in 500 people live with a long term catheter. A urinary catheter is a thin, soft, flexible tube inserted into the bladder to drain urine to a collection bag. LTCs can be associated with complications including catheter blockage and urinary tract infections. Catheter blockages affect 50% of people with LTCs. Blockage and infection can impact upon quality of life and NHS resources.

There are two broad strategies for preventing and managing catheter blockage: more frequent change of catheter and/or the use of liquid solutions to washout or flush the catheters. We do not know enough about the benefits, harms or costs of regular prophylactic washouts, to recommend whether or not they should be standard care.

In this study the researchers will determine the clinical and cost-effectiveness, acceptability, satisfaction, and safety of weekly prophylactic catheter washout policies in addition to standard LTC care compared to standard LTC care only for adults living with LTC. The primary outcome is catheter blockage requiring intervention. The primary economic outcome is the incremental cost per quality adjusted life year (QALY) gained for each washout policy compared to standard LTC care only.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 22/03/2019, Wales REC6 (Health and Care Research Wales) (Wales National Pool, Sketty Lane, Swansea SA2 8QG; Tel: +44 (0)1267 611164, 01874 615949; Email: Wales. REC6@wales.nhs.uk), ref: 19/WA/0015

Study design

Randomized; Both; Design type: Prevention, Device, Qualitative

Primary study design

Interventional

Secondary study design

Randomised controlled trial

Study setting(s)

Community

Study type(s)

Prevention

Participant information sheet

Not available in web format, please use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied

Catheter-associated complications

Interventions

The researchers are recruiting 600 people who have a LTC from primary care, secondary care and care homes. They are randomising participants to one of three groups:

- 1. Saline washouts. A policy of weekly prophylactic normal saline catheter washouts plus standard LTC care
- 2. Acidic washouts. A policy of weekly prophylactic acidic (citric) catheter washouts plus standard LTC care
- 3. Standard LTC care only (i.e. no prophylactic catheter washouts)

The researchers are following participants for 24 months to assess catheter blockages, infections, and complications, plus their quality of life, satisfaction, costs to the participant and NHS. They are exploring the views, attitudes, experiences and expectations of washouts with participants, nurses, and doctors.

Intervention Type

Procedure/Surgery

Primary outcome measure

Any catheter blockage requiring intervention up to 24 months post randomisation, from the question 'Have you had any catheter blockages since we last spoke to you?' from patient-reported monthly phone call CRF (monthly for 24 months) (Intervention is defined as any of the following: unplanned catheter removal or change or washout performed by the participant/designated person or required unplanned visits to/from any healthcare provider, or hospital admission)

Secondary outcome measures

Current secondary outcome measures as of 22/04/2022:

- 1. S-CAUTI requiring antibiotics use from the questions 'Have you had a urine infection since we last spoke to you?' and 'How many infections required antibiotics?' from patient-reported monthly phone call CRF (monthly for 24 months)
- 2. Duration of LTC in situ, catheter change due to other reasons than blockage, discontinuation of LTC use; from the questions 'Has there been discontinuation of long-term catheter use?', 'For the (reported problem), what treatment did you have?' and Answers 'Catheter change' from patient-reported monthly phone call CRF (monthly for 24 months)
- 3. Adverse events; where participant has reported a treatment in the patient-reported monthly phone call CRF (monthly for 24 months) and the question of the clinical team is asked 'Is this a

SAE? Please tick'

- 4. Hospital admissions, GP/nurse outpatient visits for catheter-related complications from the questions 'Since we last spoke to you, have you had to stay in hospital overnight for any of the problems related to your catheter?', 'For the (reported problem), where did you have treatment or a consultation with a doctor or nurse?' and possible answers 'GP at home, Nurse at home, care home staff, GP at surgery, Nurse at practice, Self/informal carer, Staff at hospital' from patient-reported monthly phone call CRF (monthly for 24 months)
- 5. Generic quality of life assessed by EQ-5D-5L17 (EuroQol questionnaire 5 dimensions 5 levels) patient-reported questionnaire; Timepoint(s): 0, 6, 12, 18, 24 months post-randomisation 6. Condition-specific quality of life assessed by ICIQ-LTCqol18 (International Consultation on Incontinence Modular Questionnaire Long Term Catheter quality of life) patient-reported questionnaire; Timepoint(s): 0, 6, 12, 18, 24 months post-randomisation
- 7. Adherence to allocated interventions, events changing type and/or frequency (or cessation) of catheter washouts in arms A and B and rates of commencing on prophylactic washouts in arm C; from the questions 'Have you done a weekly washout since we last called you?', 'Have you had any problems with the weekly washout?', 'Has your clinical care team recommended a change in washout frequency?', 'Has your clinical care team recommended a change in type of washout solution?' and 'Have you done any regular (preventative) washouts since we last called you?' from patient-reported monthly phone call CRF (monthly for 24 months)
- 8. Patients' convenience and satisfaction assessed by an adapted version of the abbreviated Treatment Satisfaction Questionnaire for medication; Timepoint(s): 0,6,12,18,24 months post-randomisation patient-reported questionnaire
- 9. Impact on day to day activities using the General Self-Efficacy Scale (GSE)20 and ICECAP-A (ICEpop CAPability measure for Adults) (≤ 65 years) or ICECAP-O21 (ICEpop CAPability measure for Older people) > 65 years patient-reported questionnaire; Timepoint(s): 0, 6, 12, 18, 24 months post-randomisation
- 10. Time and travel costs for patients and their relatives, friends or informal carers, from patient-reported questionnaire questions 'We wish to know how much money and time were spent by you and any companion in attending health care appointments or being admitted to hospital', including travel costs, time and whether or not accompanied by another person.; Timepoint(s): 18 months post-randomisation

Previous secondary outcome measures:

- 1. S-CAUTI requiring antibiotics use from the questions 'Have you had a urine infection since we last spoke to you?' and 'How many infections required antibiotics?' from patient-reported monthly phone call CRF (monthly for 24 months)
- 2. Duration of LTC in situ, catheter change due to other reasons than blockage; from the questions 'Has there been discontinuation of long-term catheter use?', 'For the (reported problem), what treatment did you have?' and Answers 'Catheter change' from patient-reported monthly phone call CRF (monthly for 24 months)
- 3. Adverse events; where participant has reported a treatment in the patient-reported monthly phone call CRF (monthly for 24 months) and the question of the clinical team is asked 'Is this a SAE? Please tick'
- 4. Hospital admissions, GP/nurse outpatient visits for catheter-related complications from the questions 'Since we last spoke to you, have you had to stay in hospital overnight for any of the problems related to your catheter?', 'For the (reported problem), where did you have treatment or a consultation with a doctor or nurse?' and possible answers 'GP at home, Nurse at home, care home staff, GP at surgery, Nurse at practice, Self/informal carer, Staff at hospital' from patient-reported monthly phone call CRF (monthly for 24 months)
- 5. Generic quality of life assessed by EQ-5D-5L17 (EuroQol questionnaire 5 dimensions 5 levels) patient-reported questionnaire; Timepoint(s): 0, 6, 12, 18, 24 months post-randomisation 6. Condition-specific quality of life assessed by ICIQ-LTCqol18 (International Consultation on

Incontinence Modular Questionnaire – Long Term Catheter quality of life) patient-reported questionnaire; Timepoint(s): 0, 6, 12, 18, 24 months post-randomisation

- 7. Adherence to allocated interventions; from the questions 'Have you done a weekly washout since we last called you?', 'Have you had any problems with the weekly washout?', 'Has your clinical care team recommended a change in washout frequency?', 'Has your clinical care team recommended a change in type of washout solution?' and 'Have you done any regular (preventative) washouts since we last called you?' from patient-reported monthly phone call CRF (monthly for 24 months)
- 8. Patients' convenience and satisfaction assessed by an adapted version of the abbreviated Treatment Satisfaction Questionnaire for medication; Timepoint(s): 0,6,12,18,24 months post-randomisation patient-reported questionnaire
- 9. Impact on day to day activities using the General Self-Efficacy Scale (GSE)20 and ICECAP-A (ICEpop CAPability measure for Adults) (\leq 65 years) or ICECAP-O21 (ICEpop CAPability measure for Older people) > 65 years patient-reported questionnaire; Timepoint(s): 0, 6, 12, 18, 24 months post-randomisation
- 10. Time and travel costs for patients and their relatives, friends or informal carers, from patient-reported questionnaire questions 'We wish to know how much money and time were spent by you and any companion in attending health care appointments or being admitted to hospital', including travel costs, time and whether or not accompanied by another person.; Timepoint(s): 18 months post-randomisation

Overall study start date

01/10/2018

Completion date

14/09/2023

Reason abandoned (if study stopped)

Lack of funding/sponsorship

Eligibility

Key inclusion criteria

- 1. Aged ≥18 years
- 2. Catheter has been in-situ for ≥28 days
- 3. No plan for discontinuation of LTC at the time of recruitment
- 4. Able to undertake catheter washouts or has a designated person able to perform washouts
- 5. Able to complete the trial documentation or has a proxy able to complete the trial documentation
- 6. Any type and route of LTC can be included

Participant type(s)

Patient

Age group

Adult

Lower age limit

18 Years

Sex

Target number of participants

Planned Sample Size: 600; UK Sample Size: 600

Total final enrolment

80

Key exclusion criteria

Current participant exclusion criteria as of 22/04/2022:

- 1. Intermittent self-catheterisation
- 2. Pregnant or contemplating pregnancy
- 3. Spinal cord injury at or above the sixth thoracic vertebra (T6) (risk of Autonomic Dysreflexia AD)
- 4. Ongoing S-CAUTI (until treatment is complete)
- 5. Visible hematuria (unless investigated/ treated)
- 6. Known allergies to either of the catheter washout solutions
- 7. Current bladder cancer (until treatment is complete and patient discharged from cancer surveillance program)
- 8. Known bladder stones (until treatment is complete)
- 9. Unable to provide consent due to incapacity
- 10. Any other clinical and social reasons that would be deemed by the recruitment team to be unsuitable for the study

If a participant stops using a long-term catheter (no catheter in situ) >=28 days. All data collected up to the point of stopping long term catheter use are retained and used in the analysis

Previous participant exclusion criteria:

- 1. Intermittent self-catheterisation
- 2. Pregnant or contemplating pregnancy
- 3. Spinal cord injury at or above the sixth thoracic vertebra (T6) (risk of Autonomic Dysreflexia AD)
- 4. Ongoing S-CAUTI (until treatment is complete)
- 5. Visible hematuria (unless investigated/ treated)
- 6. Known allergies to either of the catheter washout solutions
- 7. Current bladder cancer (until treatment is complete and patient discharged from cancer surveillance program)
- 8. Known bladder stones (until treatment is complete)
- 9. Any other clinical and social reasons that would be deemed by the recruitment team to be unsuitable for the study

If a participant stops using a long-term catheter (no catheter in situ) >=28 days. All data collected up to the point of stopping long term catheter use are retained and used in the analysis

Date of first enrolment

01/12/2019

Date of final enrolment

31/08/2022

Locations

Countries of recruitment

England

Scotland

United Kingdom

Wales

Study participating centre NHS Grampian

Summerfield House 2 Eday Road Aberdeen United Kingdom AB15 6RE

Study participating centre Northumbria Healthcare NHS Foundation Trust

Nursery Park Nursery Road Ashington United Kingdom NE63 0HP

Study participating centre West Rainton Surgery

Woodland View West Rainton Houghton-le-Spring United Kingdom DH4 6RQ

Study participating centre Great Lumley Surgery

Front Street Great Lumley Chester-le-Street United Kingdom DH3 4LE

Study participating centre The Haven Surgery

The Haven Burnhope United Kingdom DH7 0BB

Study participating centre Cambridge University Hospitals NHS Foundation Trust

Addenbrookes Hospital Hills Road Cambridge United Kingdom CB2 0QQ

Study participating centre The Chalgrove & Watlington Surgeries

Hill Road Watlington Oxford United Kingdom OX49 5AF

Study participating centre Aneurin Bevan University Health Board

Royal Gwent Hospital Cardiff Road Newport United Kingdom NP20 2UB

Study participating centre St Bartholomew's Medical Centre

Manzil Way Cowley Road Oxford United Kingdom OX4 1XB

Summertown Health Centre

160 Banbury Road Oxford United Kingdom OX2 7BS

Study participating centre Priory Gardens Surgery

The Health Centre Church St Dunstable United Kingdom LU6 3SU

Study participating centre Gosford Hill Medical Centre

167 Oxford Road Kidlington Oxford United Kingdom OX5 2NS

Study participating centre Cwm Taf Morgannwg University Health Board

Royal Glamorgan Hospital Ynysmaerdy Llantrisant United Kingdom CF72 8XR

Study participating centre

Derbyshire Community Health Services NHS Foundation Trust

Trust Hq, Ash Green Disability Ctr Ashgate Road Ashgate Chesterfield United Kingdom S42 7JE

Bicester Health Centre

Coker Close Bicester United Kingdom OX6 7AT

Study participating centre Ashgate Medical Practice

Ashgate Road Chesterfield United Kingdom S40 4AA

Study participating centre Royal Primary Care Chesterfield

The Grange Family H/ctr Stubbing Road Grangewood Chesterfield United Kingdom S40 2HP

Study participating centre **Royal Primary Care Clay Cross**

Eldon Street Clay Cross Chesterfield United Kingdom S45 9NR

Study participating centre Temple Sowerby Medical Practice

Linden Park Temple Sowerby Penrith United Kingdom **CA10 1RW**

Study participating centre **Humber Teaching NHS Foundation Trust**

Trust Hq, Willerby Hill

Beverley Road Willerby Hull United Kingdom HU10 6ED

Study participating centre Aspatria Medical Group

West Street Aspatria Wigton United Kingdom CA7 3HH

Study participating centre Leadgate Surgery

George Ewen House Watling Street Leadgate Consett United Kingdom DH8 6DP

Study participating centre Vauxhall Health Centre

111-117 Limekiln Lane Vauxhall Liverpool United Kingdom L5 8XR

Study participating centre Swanage Medical Practice

Railway Station Approach Swanage United Kingdom BH19 1HB

Study participating centre Chilwell Valley and Meadows Practice Chilwell Meadows Suspens

Chilwell Meadows Surgery

Ranson Road Chilwell Nottingham United Kingdom NG9 6DX

Study participating centre Midlands Partnership NHS Foundation Trust

Trust Headquarters
St Georges Hospital
Corporation Street
Stafford
United Kingdom
ST16 3SR

Study participating centre

St Francis Surgery

Pilgrims Close
Valley Park
Chandlers Ford
Southampton
United Kingdom
SO53 4ST

Study participating centre Hockley Farm Medical Practice

39 Hockley Farm Road Braunstone Leicester United Kingdom LE3 1HN

Study participating centre Wellbrook Medical Centre

Welland Road Hilton Derby United Kingdom DE65 5GZ

Banbury Cross Health Centre

South Bar House 6 Oxford Road Banbury United Kingdom OX16 9AD

Study participating centre Pelton & Fellrose Medical Group

Unit 1, the Lavender Centre Pelton Lane Pelton Chester Le Street United Kingdom DH2 1HS

Study participating centre The Shirley Health Partnership

Shirley Health Centre Grove Road Shirley Southampton United Kingdom SO15 3UA

Study participating centre Highcliffe Medical Centre

Heila House Lymington Road Highcliffe Christchurch United Kingdom BH23 5ET

Study participating centre East Lancashire Hospitals NHS Trust

Royal Blackburn Hospital Haslingden Road Blackburn United Kingdom BB2 3HH

Study participating centre Church Street Practice

The Health Centre Mably Way Grove Wantage United Kingdom OX12 9BN

Study participating centre Derby Road Health

336 Derby Road Nottingham United Kingdom NG7 2DW

Study participating centre King's College Hospital NHS Foundation Trust

Denmark Hill London United Kingdom SE5 9RS

Study participating centre Manchester University Hospital NHS Ft (hq)

Oxford Road Manchester United Kingdom M13 9WL

Study participating centre

Solent NHS Trust

Solent NHS Trust Headquarters Highpoint Venue Bursledon Road Southampton United Kingdom SO19 8BR

The White Horse Medical Practice

The Faringdon Medical Centre Volunteer Way Faringdon United Kingdom SN7 7YU

Study participating centre Mendip Vale Medical Practice (yatton)

155 Mendip Road Yatton Bristol United Kingdom BS49 4ER

Study participating centre Brierley Park Medical Centre

127 Sutton Road Huthwaite Sutton-in-ashfield United Kingdom NG17 2NF

Sponsor information

Organisation

NHS Grampian

Sponsor details

-

Scotland United Kingdom AB15 6RE

Sponsor type

Hospital/treatment centre

ROR

https://ror.org/00ma0mg56

Funder(s)

Funder type

Government

Funder Name

NIHR Evaluation, Trials and Studies Co-ordinating Centre (NETSCC); Grant Codes:

Results and Publications

Publication and dissemination plan

The protocol will be publicly available on the study website and the NIHR HTA website. The researchers intend to publish the study protocol as soon as practicable.

Updated 08/08/2022:

The protocol has been published on 4th August 2022 and is available at https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-022-06577-2

Intention to publish date

31/03/2025

Individual participant data (IPD) sharing plan

A request to access the datasets generated during the trial should be directed in the first instance to the corresponding author (Professor Mohamed Abdel-fattah, m.abdelfattah@abdn. ac.uk). The datasets collected in questionnaires at all timepoints and the baseline, monthly and serious adverse event case report forms for all 80 participants recruited to the trial are available. The dataset is available in fully anonymised electronic form, at an individual level, and in accordance with participant consent. The data dictionaries, study protocol, statistical analysis plan, patient information leaflets and template case report forms are also available on request to facilitate interpretation of data. Questionnaire templates, or parts thereof, may be available pending review of the relevant licensing agreements. Data for the study is currently available within a local repository at the University of Aberdeen and will be retained for a period of at least 10 years after close of trial in accordance with funder, Sponsor and local archiving procedures. Applicants will require to complete a data request form, which will be reviewed by a Data Sharing Committee which includes the Chief Investigator. Applications will be considered on a case-by-case basis from bonafide researchers. We are obligated to ensure that optimal use is made of the data that is collected for research and we recognise the value of sharing individual level data. The interests of research participants, researchers and other stakeholders will be considered when considering each application. A fully authorised data sharing agreement will be required prior to the release of data.

IPD sharing plan summary

Available on request

Study outputs

Output type Details Date Peer Patientcreated added reviewed? facing?

Protocol article		04/08/2022	05/08 /2022	Yes	No
HRA research summary			28/06 /2023	No	No
Results article		02/12/2024	03/12 /2024	Yes	No
Other publications	Embedded longitudinal qualitative study	07/04/2025	08/04 /2025	Yes	No