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Best systemic treatments for adults with atopic eczema over the long term (BEACON)

Submission date	Recruitment status	[X] Prospectively registered
14/02/2023	Recruiting	[X] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
02/10/2023	Ongoing	[_] Results
Last Edited	**Condition category**	[_] Individual participant data
11/11/2026	Skin and Connective Tissue Diseases	[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Eczema is a skin disease affecting 1 in 20 UK adults. People with eczema itch constantly and the damaged inflamed skin often gets infected, leading to disfigurement, low mood and a negative impact on quality of life. More severe eczema requires 'systemic' treatments such as methotrexate and ciclosporin that dampen down the immune system. Recently, treatments have been developed to block signals from certain immune cells particularly important in eczema, including dupilumab and abrocitinib. These treatments are available on the NHS but so far studies have not compared them against standard treatments. The aim of this study is to compare the effectiveness, tolerability, and cost of dupilumab, methotrexate, and abrocitinib to ciclosporin.

Who can participate?
Patients aged 18 years and over with moderate to severe eczema

What does the study involve?
Participants will get either oral ciclosporin, methotrexate self-injection, dupilumab self-injection or oral abrocitinib for up to 1 year. Patients will know which treatment they are on but the person assessing the eczema will not know to make sure we come up with a truthful answer. Participants will complete questionnaires between visits about any side effects and whether they have used any other NHS services. There will be an option to increase the treatment dose after 3 months for some study arms, and at 6 months the treatment can be changed if it is not working sufficiently. The researchers will judge the success of the different treatments by looking at participants' skin using a reliable eczema score and by asking participants about things like itching and quality of life. They will collect information about side effects and whether the treatments are cost-effective.

What are the possible benefits and risks of participating?
The therapies involved in BEACON are all used in standard NHS practice. These include the very latest eczema treatments which are not available through the NHS if participants have not already tried standard treatments. There is therefore a good possibility that participants will see benefits to their health including a reduction in eczema symptoms and signs. Participants will be monitored very closely by the clinical study team and will have access to a dedicated study team.

Close monitoring and contact will allow the team to answer any questions or concerns relating to care and wellbeing throughout the study. It is hoped that the information from this study will help to provide more effective and better-tolerated treatment for people with eczema in the future.
Participants will be required to attend the clinic seven times throughout the study and up to six additional safety blood tests/blood pressure measurements that mirror current standard clinical care. The local study team will try to streamline each clinic visit as much as possible to reduce the time burden and community safety assessments will be utilised where possible. Blood tests may be uncomfortable and cause some bruising or lightheadedness. On very rare occasions infection can arise as a result of having blood taken. To reduce discomfort all required samples at any one visit will be taken at the same time by a clinical professional trained and experienced in taking blood from patients.
Participants are required to complete multiple questionnaires before each visit which adds additional time burden, however, questionnaires will be sent out in advance so they can be completed remotely at a convenient time for the participant.
The "wash out" of any current phototherapy or systemic treatment prior to the start of the trial presents a risk of exacerbating current eczema symptoms, however during this period participants will be closely monitored and assessed to ensure their skin does not significantly deteriorate and that it is still safe for them to take part in the trial. The study design allows for moisturisers, topical steroids and topical calcineurin inhibitors to be used by participants throughout the screening period and the study in order to prevent disease flare-ups.
Whilst all of the trial interventions are widely used in eczema and have established safety profiles, there are risks of side effects occurring with each treatment, as well as the risk of eczema symptoms worsening; the potential risks and benefits of each study medication are detailed in the drug-specific information leaflets (British Association of Dermatology information leaflets for the specific drugs, used in routine practice) attached to the Patient Information Leaflet and will be discussed with the investigator prior to informed consent being provided. Upon randomisation, and knowing which drug a participant will be taking, the investigators will be encouraged to re-summarise the key relevant side effects associated with that specific medicine. The participant will be provided with the local study team details so any concerning symptoms can be reported and escalated if necessary. Any adverse events experienced throughout the trial will be evaluated by the site investigator for intensity (mild, moderate or severe); causality (not related, unlikely, possible, likely, or definitely related to the trial intervention); and expectedness (unexpected or expected, based on the Summary of Product Characteristics and Reference Safety Information for that medication). The site investigator will assess whether an AE is severe enough to require the participant to withdraw from the study treatment and the participant bears the right to withdraw at any time if an AE is intolerable.

Dupilumab is commonly associated with cases of conjunctivitis and allergic conjunctivitis, eye pruritus, blepharitis, and dry eye and with infrequent cases of keratitis and ulcerative keratitis. In line with the MHRA drug safety update (November 2022), clinicians are advised to be alert to the risks of ocular reactions and promptly review new onset or worsening ocular symptoms, referring patients for an eye examination as appropriate. Conjunctivitis or dry eye that does not resolve following initial treatment, or patients with signs and symptoms suggestive of keratitis (especially eye pain and vision changes) will also be referred for an eye examination, as appropriate. Sudden changes in vision and significant eye pain will warrant urgent ophthalmology review. Clinicians will also discuss with patients or caregivers the potential for, and symptoms of these ocular side effects and advise them to promptly report new-onset or worsening eye symptoms to their healthcare professional so that appropriate treatment can be initiated.

Abrocitinib should only be used if no suitable treatment alternatives are available in patients who are 65 years of age and older, who have a history of atherosclerotic cardiovascular disease or other cardiovascular risk factors (such as current or past long-time smokers), and who have malignancy risk factors (e.g. current malignancy or history of malignancy). Note, the need for a shingles vaccination (Shingrix) should be considered based on any specific risk factors relevant to the individual participant and up-to-date formal Green Book guidance: Immunisation against infectious disease - GOV.UK (https://www.gov.uk).

Methotrexate, dupilumab, and abrocitinib may be harmful to a baby in the womb (limited data for dupilumab, no evidence of harm). Women of childbearing potential are advised to use effective contraception during the trial. Men are advised to use effective contraception if taking methotrexate. Both women and men are advised not to conceive for 6 months post-cessation of methotrexate, and women for 1-month post-cessation of abrocitinib. Urine pregnancy tests will be performed.

Participants will need to avoid live or live-attenuated vaccines whilst on study treatments and for up to 3-12 months after the end of treatment. This is discussed in the Participant Information Leaflet and participants are advised to liaise with their study team if they have been invited to receive or require any vaccines.

Where is the study run from?
1. Guy's and St Thomas' NHS Foundation Trust (UK)
2. King's College London (UK)

When is the study starting and how long is it expected to run for?
January 2021 to January 2031

Who is funding the study?
1. National Institute for Health and Care Research Health Technology Assessment (NIHR HTA) (UK)
2. Medac (Germany)
3. Pfizer (USA)

Who is the main contact?
BEACON@kcl.ac.uk

Contact information

Type(s)
Principal investigator

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Additional identifiers

Integrated Research Application System (IRAS)
1004703

Central Portfolio Management System (CPMS)
53153

National Institute for Health and Care Research (NIHR)
129926

Protocol serial number
EDGE135740

Study information

Scientific Title
Best Systemic Treatments for Adults with Atopic Eczema over the Long Term (BEACON): a Phase IV, multi-arm multi-stage, assessor-blind randomised control trial comparing the effectiveness, tolerability and cost-effectiveness of systemic treatments for adults with moderate-severe atopic eczema

Acronym
BEACON

Study objectives
Current study hypothesis as of 06/03/2025:
The primary objective of this trial is to determine the effectiveness of systemic treatments for moderate-severe eczema in adults compared with the control systemic treatment ('standard of care') over 6 months (including a pre-specified subgroup analysis examining moderate and severe groups separately).

1. Determine the effectiveness of systemic treatments compared with standard of care over 12 months
2. Determine the impact on symptoms, quality of life, daily function and mood of systemic treatments compared with standard of care over 12 months
3. Determine the safety/tolerability of systemic treatments compared with standard of care, and adherence to the medications over 12 months
4. Determine the cost-effectiveness of systemic treatments compared with standard of care over 12 months
5. Collect data on which first-line therapy optimises treatment continuity over the first year and in the event of a treatment switch, which of the tested pathways optimises treatment outcomes at one year.
6. Determine the incidence of AEs of special interest in systemic treatments compared with standard of care over 12 months
7. Collect clinical data and samples for use by the scientific community to understand atopic

eczema disease biology and treatment response in order to improve outcomes in people with atopic eczema.

Previous study hypothesis:
Primary objective:
Determine the effectiveness of methotrexate and dupilumab compared with ciclosporin. The primary endpoint is the change in objective disease severity at 6 months, presented as mean absolute change from baseline, using the Eczema Area Severity Index (EASI, blinded assessment).

Secondary objectives:
1. Determine the effectiveness of methotrexate and dupilumab compared with ciclosporin over 12 months
2. Determine the impact of methotrexate and dupilumab compared with ciclosporin on symptoms, quality of life, daily function and mood over 12 months
3. Determine the safety/ tolerability of methotrexate and dupilumab compared with ciclosporin over 12 months and adherence to the different medications
4. Determine the cost-effectiveness of methotrexate and dupilumab compared with ciclosporin over 12 months
5. Provide data on which first-line therapy optimises treatment continuity over the first year and in the event of a treatment switch, which of the tested pathways optimises treatment outcomes at 1 year
6. Determine the incidence of ocular surface disease, arthritis and/or enthesitis, and paradoxical skin reactions on methotrexate and dupilumab compared with ciclosporin over 12 months
7. To contribute clinical data and samples for use by the scientific community

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 28/09/2023, London - Harrow Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 207 104 8154; harrow.rec@hra.nhs.uk), ref: 23/LO/0224

Primary study design
Interventional

Study design
UK multicentre 1-year assessor-blind randomized controlled trial

Study type(s)
Quality of life, Safety, Treatment

Health condition(s) or problem(s) studied
Atopic dermatitis

Interventions
Current interventions as of 06/03/2025:
Randomization is being performed using the King's Clinical Trials Unit Randomization system online, specific to the requirements of the BEACON trial.

1. Ciclosporin: 3 mg/kg orally daily increasing to 5 mg/kg daily after 3 months if required (joint patient/investigator decision as per standard practice). Dose reduction is permitted at any point

and will be documented in the participants' medical notes/source data worksheets and CRF.
2. Methotrexate: Self-administered subcutaneous injection, 15 mg once weekly, increasing to 20 mg after 3 months if required (joint patient/investigator decision, as per standard practice). A dose reduction is permitted at any point and will be documented in the participants' medical notes/Source Data Worksheets and CRF.
3. Dupilumab: Self-administered subcutaneous injection, 600 mg (week 0) followed by 300 mg every 2 weeks (standard licensed dose, no adjustments).
4. Abrocitinib: 200 mg orally daily. Dose reduction is permitted at any point and will be documented in the participants' medical notes/source data worksheets and CRF.

All treatments will be taken by participants for a maximum of 12 months on the trial.

Previous interventions:
Randomization is being performed using the King's Clinical Trials Unit Randomization system online, specific to the requirements of the BEACON trial.

1. Ciclosporin: 3 mg/kg orally daily increasing to 5 mg/kg daily after 3 months if required (joint patient/investigator decision as per standard practice). Dose reduction is permitted at any point and will be documented in the participants' medical notes/source data worksheets and CRF.
2. Methotrexate: Self-administered subcutaneous injection, 15 mg once weekly, increasing to 20 mg after 3 months if required (joint patient/investigator decision, as per standard practice). A dose reduction is permitted at any point and will be documented in the participants' medical notes/Source Data Worksheets and CRF.
3. Dupilumab: Self-administered subcutaneous injection, 600 mg (week 0) followed by 300 mg every 2 weeks (standard licensed dose, no adjustments).

All treatments will be taken by participants for a maximum of 12 months.

Intervention Type
Drug

Phase
Phase IV

Drug/device/biological/vaccine name(s)
Ciclosporin, dupilumab, methotrexate, abrocitinib

Primary outcome(s)
Objective disease severity measured using the Eczema Area Severity Index (EASI, blinded assessment) at baseline and 6 months post-randomisation

Key secondary outcome(s)
1. Eczema severity measured by:
1.1. EASI (blinded assessment):
1.1.1. EASI50/EASI75/EASI90/EASI100/absolute EASI ≤7 (months 1, 3, 6, 9, 12, presented as proportion achieving these outcomes)
1.1.2. Change from baseline in EASI (months 1, 3, 9, 12, presented as mean absolute change)
1.2. Investigator Global Assessment (vIGA-AD, blinded assessment, months 1, 3, 6, 9, 12, proportion clear/almost clear)
2. Patient-reported symptoms (months 1, 3, 6, 9, 12) measured by:
2.1. Patient Orientated Eczema Measure (POEM, mean absolute change from baseline)

2.2. 11-point peak pruritus numerical rating scale (NRS, mean absolute change from baseline)
2.3. Overall disease control (RECAP, mean absolute change from baseline)
2.4. Patient global assessment (PtGA (5-point scale), proportion clear/almost clear)
3. Quality of life measured by Dermatology Life Quality Index (DLQI) at months 1, 3, 6, 9, 12, mean absolute change from baseline and proportion achieving DLQI ≤5
4. Depression and anxiety measured by Patient Health Questionnaire 9-item and Generalised Anxiety Disorder 7-item (PHQ-9 and GAD-7) at months 6, 12, mean absolute change from baseline and proportion with score <5)
5. Health economic outcomes (months 3, 6, 9, 12):
5.1. Resource use questionnaire
5.2. 5-level EQ-5D (EQ-5D-5L, months 3, 6, 9, 12 mean utility by study arm at each time point. Used to estimate QALYs as described in the HEAP.
6. Safety outcomes will include (continuous to 12 months):
6.1. Adverse events
6.2. Adverse events of special interest
7. Adherence and tolerability:
7.1. Visual Analog Scale (VAS) for Medications Taken at months 1, 3, 6, 9, 12
7.2. Tolerability measured using a non-validated measure (Likert scale) at months 1, 3, 6, 9, 12

Completion date
01/01/2031

Eligibility

Key inclusion criteria
1. Patients must be deemed to have the capacity to provide verbal fully informed consent to participate
2. Adults (aged 18+ years) with a diagnosis of atopic eczema (UK Working Party Diagnostic Criteria)
3. Moderate to severe eczema requiring systemic therapy
4. Objective measure of moderate to severe eczema based on an Investigator Global Assessment (vIGA-AD) score of ≥3 at baseline
5. Willing and able to comply with scheduled visits, treatment plan, laboratory tests and other study procedures

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
120 Years

Sex

All

Total final enrolment
0

Key exclusion criteria
Current exclusion criteria as of 06/03/2025:
1. Active dermatologic conditions that may confound the diagnosis of atopic eczema or interfere with assessment of treatment.
2. Prior exposure to any of the systemic therapies being investigated in the trial or those with a similar mechanism of action to the systemic therapies being investigated in the trial.
3. Receipt of any of the following:
a. Phototherapy (UVB TL01, UVB, PUVA, UVA1), tanning beds, oral or parenteral traditional Chinese medicine or oral systemic immunosuppressant/ immunomodulatory agent that can help eczema (including but not limited to prednisolone, azathioprine, mycophenolate mofetil, tacrolimus, Janus kinase (JAK) inhibitor or phosphodiesterase 4 inhibitor) within 4 weeks prior to randomisation.
b. Biologic therapy for eczema (including but not limited to amlitelimab, rocatinlimab and nemolizumab) within 3 months prior to randomisation.
c. Receipt of a cell-depleting agent (e.g. rituximab, alemtuzumab, cyclophosphamide, chlorambucil) for 6 months prior to randomisation or until lymphocyte count returns to normal (whichever is longer)
4. Any medical condition that, in the opinion of the investigator, may compromise the safety of the participant in the trial, interfere with the evaluation of the IMP, or reduce the participant's ability to participate in the trial.
5. Receipt of live/ live attenuated vaccine 30 days prior to the baseline visit date or expected need of live / live attenuated vaccination during the trial.
6. Participating in another clinical trial.
7. Women of child-bearing potential at risk of pregnancy during the trial (i.e. sexually active women not on effective contraception)
8. Women who are pregnant or breastfeeding.

Drug-specific exclusion criteria:
Please note, as long as a participant is eligible to take ciclosporin (control arm) and at least one of the other trial treatments they can be randomised (i.e. they can meet exclusion criteria for one or more of the other treatments and still be randomised).

Ciclosporin
1. Any contraindication to ciclosporin according to standard clinical care and/or the opinion of the investigator

Dupilumab
1. Any contraindication to dupilumab according to standard clinical care and/or the opinion of the investigator

Methotrexate
1. Any contraindication to methotrexate according to standard clinical care and/or the opinion of the investigator
2. Men and women planning conception within 6 months (cannot conceive for a minimum of 6 months after stopping methotrexate and need to continue on effective contraception through that period)

Abrocitinib
1. Any contraindication to abrocitinib according to standard clinical care and/or the opinion of the investigator.

Note, as per license, abrocitinib should only be used if no suitable treatment alternatives are available in patients:
1. 65 years of age and older
2. Patients with a history of atherosclerotic cardiovascular disease or other cardiovascular risk factors (such as current or past long-time smokers)
3. Patients with malignancy risk factors (e.g. current malignancy or history of malignancy)

Note, the need for a shingles vaccination (Shingrix) should be considered based on any specific risk factors relevant to the individual participant and up-to-date formal Green Book guidance: Immunisation against infectious disease - GOV.UK (https://www.gov.uk).

Previous exclusion criteria:
1. Active dermatologic conditions that may confound the diagnosis of atopic eczema or interfere with assessment of treatment
2. Prior exposure to any of the systemic therapies being investigated in the trial
3. Receipt of any of the following:
3.1. Phototherapy (UVB TL01, UVB, PUVA, UVA1), tanning beds, oral or parenteral traditional Chinese medicine or oral systemic immunosuppressant/ immunomodulatory agent that can help eczema (including but not limited to prednisolone, azathioprine, mycophenolate mofetil, tacrolimus, Janus kinase (JAK) inhibitor, or phosphodiesterase 4 inhibitor) within 4 weeks prior to randomisation
3.2. Biologic therapy for eczema (including but not limited to tralokinumab, lebrikizumab and nemolizumab) within 3 months prior to randomisation
3.3. Receipt of a cell-depleting agent (e.g. rituximab, alemtuzumab, cyclophosphamide, chlorambucil) for 6 months prior to randomisation or until lymphocyte count returns to normal (whichever is longer)
4. Any medical condition that, in the opinion of the investigator, may compromise the safety of the participant in the trial, interfere with evaluation of the IMP, or reduce the participant's ability to participate in the trial
5. Receipt of live/live attenuated vaccine 30 days prior to the baseline visit date or expected need of live/live attenuated vaccination during the trial.
6. Participating in another clinical trial
7. Women of child-bearing potential at risk of pregnancy during the trial (i.e. sexually active women not on effective contraception)
8. Women who are pregnant or breastfeeding

Drug-specific exclusion criteria:
Please note, as long as a participant is eligible to take ciclosporin (control arm) and at least one of the other trial treatments they can be randomised (i.e. they can meet exclusion criteria for one of methotrexate or dupilumab and still be randomised).

Ciclosporin
1. Any contraindication to ciclosporin according to standard clinical care and/or the opinion of the investigator

Dupilumab
1. Any contraindication to dupilumab according to standard clinical care and/or the opinion of the investigator

Methotrexate
1. Any contraindication to methotrexate according to standard clinical care and/or the opinion of the investigator
2. Men and women planning conception within 6 months (cannot conceive for a minimum of 6 months after stopping methotrexate and need to continue on effective contraception through that period)

Date of first enrolment
03/01/2024

Date of final enrolment
30/11/2027

Locations

Countries of recruitment
United Kingdom

England

Scotland

Wales

Study participating centre
Guys and St Thomas Hospital
Great Maze Pond
London
England
SE1 9RT

Study participating centre
Royal Victoria Infirmary
Claremont Wing Eye Dept
Royal Victoria Infirmary
Queen Victoria Road
Newcastle upon Tyne
England
NE1 4LP

Study participating centre
Salford Royal
Stott Lane
Salford

England
M6 8HD

Study participating centre
Nottingham University Hospitals NHS Trust - Queen's Medical Centre Campus
Nottingham University Hospital
Derby Road
Nottingham
England
NG7 2UH

Study participating centre
Ninewells Hospital
Ninewells Avenue
Dundee
Scotland
DD1 9SY

Study participating centre
Royal Devon and Exeter Hospital
Royal Devon & Exeter Hospital
Barrack Road
Exeter
England
EX2 5DW

Study participating centre
Homerton University Hospital
Homerton Row
London
England
E9 6SR

Study participating centre
Churchill Hospital
Churchill Hospital
Old Road
Headington
Oxford
England
OX3 7LE

Study participating centre
Queen Elizabeth Hospital
Woolwich Stadium Road
Woolwich
London
England
SE18 4QH

Study participating centre
St George's Hospital
Blackshaw Road
Tooting
London
England
SW17 0QT

Study participating centre
Kings College Hospital
Denmark Hill
London
England
SE5 9RS

Study participating centre
Russells Hall Hospital
Pensnett Road
Dudley
England
DY1 2HQ

Study participating centre
Solihull Hospital
Lode Lane
Solihull
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B91 2JL

Study participating centre

The Royal London Hospital
Whitechapel Road
London
England
E1 1BB

Study participating centre
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Lauriston Buildings
Edinburgh
Scotland
EH3 9HA

Study participating centre
Whipps Cross University Hospital
Whipps Cross Road
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London
England
E11 1NR

Study participating centre
University Hospital Southampton NHS Foundation Trust
Southampton General Hospital
Tremona Road
Southampton
England
SO16 6YD

Study participating centre
Torbay and South Devon NHS Foundation Trust
Torbay Hospital
Newton Road
Torquay
England
TQ2 7AA

Study participating centre
University Hospital Lewisham
Lewisham High Street
London

England
SE13 6LH

Sponsor information

Organisation
Guy's and St Thomas' NHS Foundation Trust

ROR
https://ror.org/00j161312

Organisation
King's College London

ROR
https://ror.org/0220mzb33

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

Funder Name
Medac

Alternative Name(s)
medac GmbH

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
Germany

Funder Name
Pfizer

Results and Publications

Individual participant data (IPD) sharing plan
Some of the datasets generated during and/or analysed during the current study will be available (where permitted by commercial funders) upon request from the trial managers at BEACON@kcl.ac.uk, following consultation with the Chief Investigator and Trial Management Group.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol (other)		10/11/2025	11/11/2026	No	No
Study website		11/11/2025	11/11/2025	No	Yes