

# Beat severe asthma

<b>Submission date</b> 27/05/2020	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 29/05/2020	<b>Overall study status</b> Stopped	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 25/09/2024	<b>Condition category</b> Respiratory	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Asthma affects over 5 million people in the UK and while most respond well to currently available therapy, 3-5 in 100 sufferers have severe asthma. This is when the symptoms persist and have an impact on day-to-day life. This trial is looking at the two sub-types of severe asthma, T2-High and T2-Low which are identified through a simple blood test, and comparing two different drugs (an antibiotic and a biologic) to Placebos (substances containing no active medication) with the aim of understanding more about the condition and reducing the number of exacerbations (sudden worsening of asthmatic symptoms) that individuals experience.

### Who can participate?

Patients that are both (i) exacerbation prone ( $\geq 2$  per year,  $\geq 3$  days use of acute prescription for systemic steroids and/or acute prescription for antibiotics due to a worsening of asthma/airways disease, or admission to hospital/A&E, and have (ii) severe asthma (defined by a hospital specialist or severe asthma Multi-Disciplinary Team [or non-English equivalent]) according to the ATS/ERS consensus criterion. Further details can be found in the eligibility criteria which was provided in the online submission.

### What does the study involve?

Stage 1 of the trial involved participants undergoing a screening process to see if they are eligible for the trial via what severe asthma sub-type they have. They will be asked to provide a blood sample, complete 5 short questionnaires, provide details about their medical, asthma and medication history and undergo assessments such as weight, height, BMI, vital signs, pregnancy test (if applicable) and a physical examination.

The Run In period allows the participant to become familiar with an electronic microdiary that they may wish to use during the trial along with confirming that the participant is in a stable disease condition, reviewing their Asthma Action Plan and assessing their maintenance ICS/LABA technique. The participant will also be informed of their severe asthma sub-type.

In Stage 2, participants will be randomised into either the T2-High or T2-Low treatment cohort where they will randomly be assigned to receive either an IMP or a placebo. This trial is doubled blinded so neither the participant nor the clinicians will know which treatment they will receive until the end of the trial. Participants will then be seen on a regular basis for 13.5 months to assess safety and efficacy of the trial treatments. Participants will also be asked to undergo the same assessments as during Stage 1 along with different questionnaires, spirometrys, sputum inductions, ECGs, biochemistry assessments, breathing tests and pregnancy tests (if applicable).

The participant is also asked to provide blood (serum and plasma), DNA, sputum and urine samples throughout the trial to be stored for future ethically approved research.

What are the possible benefits and risks of participating?

Risks: Some appointments may take up to 5 hours but participants will be given a break and provided with refreshments. Also, the full safety information and side effects for both IMPs is still unknown. However, based on results from previous clinical trials, both IMPs are well tolerated and the side effects are mild in intensity.

Benefits: There are no guaranteed benefits to taking part in this trial as there is very limited information about the effectiveness of the trial drugs.

However, recent evidence suggests that receiving a drug or even a placebo may halve the number of exacerbations participants experience. This means there should be a clinically important and measurable effect on the number and severity of exacerbations participants experience by participating in this trial, but this is not certain.

Participants will also be able to take the tablets home with them rather than receiving injections from their care team.

Where is the study run from?

Leicester Clinical Trials Unit, University of Leicester (UK)

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

January 2020 to December 2022 (updated 04/08/2020, previously: September 2022)

Who is funding the study?

1. National Institute for Health Research (NIHR) (UK)
2. Knopp Biosciences LLC (USA)

Who is the main contact?

Mirjana Sirovica (public), [beatsevereasthma@leicester.ac.uk](mailto:beatsevereasthma@leicester.ac.uk)  
Prof. Salman Siddiqui (scientific), [ss338@le.ac.uk](mailto:ss338@le.ac.uk)

### **Study website**

<https://le.ac.uk/lctu/trials/beat-severe-asthma>

## **Contact information**

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Public

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## Additional identifiers

**EudraCT/CTIS number**  
2019-003013-34

**IRAS number**  
247350

**ClinicalTrials.gov number**  
Nil known

**Secondary identifying numbers**  
IRAS 247350, CPMS 44510

## Study information

**Scientific Title**  
Beyond Allergic Th2 Severe Asthma

**Acronym**  
BEAT-SA

**Study objectives**  
1. The development of a severe asthma Multi-Disciplinary Team (MDT) (or non-English equivalent) centred clinical trial platform will facilitate the delivery of severe asthma trials in the UK  
2. Stratified approaches utilising blood eosinophils to target exacerbation prone T2-High/T2-Low

sub-types of severe asthma will provide a step change in asthma care by reducing asthma exacerbations and improving asthma control and quality of life

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Approved 02/03/2020, NRES Committee East Midlands – Leicester South (The Old Chapel, Royal Standard Place, Nottingham, NG1 6FS, UK; +44 (0)207 104 8285; Leicestersouth.rec@hra.nhs.uk), ref: 20/EM/0015.

### **Study design**

Multi-centre platform trial with two (parallel group) randomised interventional double-blind placebo-controlled treatment cohorts

### **Primary study design**

Interventional

### **Secondary study design**

Randomised controlled trial

### **Study setting(s)**

Hospital

### **Study type(s)**

Treatment

### **Participant information sheet**

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

### **Health condition(s) or problem(s) studied**

Severe asthma

### **Interventions**

Participants will initially be screened and stratified into a severe asthma sub-group (either T2-High or T2-Low) using blood eosinophils levels. Participants will then be randomised into either the T2-High treatment cohort to receive either 150mg twice daily of dexamipexole or a matched placebo or the T2-Low treatment cohort to receive either 100mg once daily doxycycline or a matched placebo. All drugs must be taken orally. Randomisation will be performed electronically and both the participant and the clinical team will be blinded to the intervention but will know which severe asthma sub-type they have. Participants will receive their trial treatment for a maximum of 12 months and will be asked to attend regular trial visits to undertake numerous assessments to monitor safety and trial progression. A wash out safety visit will take place 6 weeks after the participant has ceased taking their trial medication to monitor and assess safety and any after effects.

### **Intervention Type**

Drug

### **Phase**

## Phase II

### Drug/device/biological/vaccine name(s)

Dexpramipexole Doxycycline

### Primary outcome measure

Annual rate of severe exacerbations defined as one or more of the following (using patient records):

1. Use of systemic steroids (tablets, suspension or injection) or an increase in systemic steroids (if stable maintenance) for equal to or greater than 3 days
2. A new prescription of antibiotics for worsening asthma/airways disease for equal to or greater than 3 days
3. Both 1 and 2
4. An admission to hospital because of asthma, or an emergency department requiring systemic steroids or antibiotics.

### Secondary outcome measures

1. Assessing improvements in asthma symptoms is measured using the Juniper six-point Asthma Control Score (ACQ-6) measured at 3, 6, 9 and 12 months
2. Measuring health-related quality of life in trial participants is measured using the Juniper Asthma quality of life questionnaire AQLQ (S) measured at 3, 6, 9 and 12 months
3. Post bronchodilator FEV1 and FEV1/FVC measured at 3, 6, 9 and 12 months using spirometry
4. Absolute blood eosinophil and neutrophil levels ( $\times 10^9/L$ ) measured at 3, 6, 9 and 12 months by taking blood samples from participants and performing full blood and differential cell counts
5. Percentage sputum eosinophils measured at 3, 6, 9 and 12 months through participant sputum samples obtained by sputum induction
6. Fractional exhaled nitric oxide levels (FeNO) in exhaled breath is measured at 3, 6, 9 and 12 months
7. Percentage and total sputum neutrophils measured at 3, 6, 9 and 12 months through participant sputum samples obtained by sputum induction
8. Testing the impact of chronic rhinosinusitis on the participant's quality of life using Sino-nasal Outcome Test (SNOT-22) measured at 3, 6, 9 and 12 months
9. Measuring the participant's subjective experience of severe asthma and the associated symptoms measured using VAS scale measured at 3, 6, 9 and 12 months
10. Assessing the health status of the participants using EuroQol Five Dimension EQ-5D-5L quality of life (Baseline and penultimate visit only i.e. Day 0 and Day 365)
11. Measuring the impairment that severe asthma in both paid and unpaid activities for the participants and is measured using the Work Productivity and Activity Impairment (WPAI) (Baseline and penultimate visit only i.e. Day 0 and Day 365)
12. Time to first severe exacerbation
13. Annual rate of severe exacerbation events defined by the use of systemic steroids, antibiotics or both
14. Adverse events measured by asking the participant to report all adverse events and any changes in adverse events at every scheduled trial visit
15. Patient treatment adherence and compliance measured using participant drug diaries and tablet/capsule counts at each scheduled trial visit

### Overall study start date

02/01/2020

### Completion date

31/12/2022

## **Reason abandoned (if study stopped)**

Participant recruitment issue

# **Eligibility**

## **Key inclusion criteria**

For Stage 1 Screening, the trial population will consist of participants that are both:

1. Exacerbation prone ( $\geq 2$  record confirmed severe exacerbations)

AND

2. Severe asthma (defined by a hospital specialist or severe asthma Multi-Disciplinary Team (MDT, or non-English equivalent), according to the ATS/ERS consensus criterion

3. Aged  $\geq 18$  years and  $< 80$  years

4. Capable of giving written informed consent

5. Willing and able to comply with study protocol requirements

T2-High and T2-Low Inclusion Criteria:

1. Aged  $\geq 18$  years and  $< 80$  years

2. Capable of giving written informed consent

3. Diagnosis of severe asthma as per the ATS/ERS severe asthma guidelines. [Participants may be included with a lower dose of current ICS than endorsed by the ATS/ERS criteria at the discretion of the investigator if previous high ICS dose had led to side effects

4. Stable asthma therapy for at least 1 month before screening

5. Willing and able to comply with study protocol requirements

6. History of 'exacerbation prone asthma' defined as  $\geq$  two record confirmed severe exacerbations within 12 months of MDT initial pre-screening review. Defined as worsening asthma symptoms necessitating one or more of the following:

6.1. Use of systemic steroids (tablets, suspension or injection) or an increase in systemic steroids (for those on stable maintenance steroids) for  $\geq 3$  days

6.2. New prescription of antibiotics because of worsening asthma/airways disease for  $\geq 3$  days

6.3. Both 6.1. and 6.2.

6.4. Admission to hospital because of asthma, or an emergency department requiring systemic steroids (tablets, suspension or injection) or antibiotics

[If any of the above are identified  $\geq 7$  days apart, these would be defined as separate/new exacerbation events]

## **Participant type(s)**

Patient

## **Age group**

Adult

## **Lower age limit**

18 Years

## **Sex**

Both

## **Target number of participants**

234

## Key exclusion criteria

1. Current or within the last 6 months (or maximum relevant wash out period, whichever is longer), participation in an investigational drug or device trial at the time of screening
2. Patients who are planning to take more than a 21 day consecutive holiday during the trial period
3. Have received treatment with biologics such as omalizumab, mepolizumab, reslizumab, benralizumab or dupilumab within four months or five half-lives (whichever is longer) prior to screening
4. Recent treatment with bronchial thermoplasty, defined as completion of all thermoplasty treatment sessions within 6 months of screening
5. Patients who have been hospitalised or required a new prescription of high-dose ( $\geq 10\text{mg}$  prednisolone/day) oral corticosteroid (OCS) therapy within 4 weeks of the screening visit
6. Recent (within 4 weeks of screening) or current lower respiratory tract infection requiring antibiotics (this excludes antibiotics taken for other purposes other than asthma exacerbations)
7. Acute illness other than asthma which, in the investigator's opinion, may compromise the well-being of the patient or study endpoint assessments at the start of the study
8. History of unstable or severe cardiac, hepatic, or renal disease, or other medically significant illness which the investigator believes would be a contraindication to study participation
9. Current smoking within the past year or a prior smoking history of  $\geq 15$  pack-years (including e-cigarettes)
10. Patients with a body mass index (BMI)  $\leq 17$  or  $\geq 45 \text{ kg/m}^2$
11. History of human immunodeficiency virus (HIV) or hepatitis B or C
12. History of malignancy of any organ system (other than localised basal cell carcinoma of the skin), treated or untreated, currently or within the past 5 years, regardless of whether there is evidence of local recurrence or metastases
13. History (or suspected history) of alcohol or substance abuse as defined by the Diagnostic and Statistical manual of mental Disorders (5th edition) substance use disorders guidelines within two years of screening
14. If female, is pregnant or lactating or intends to become pregnant during the study period where pregnancy is defined as the state of a female after conception and until the termination of gestation, confirmed by a positive hCG laboratory test
15. Women of child-bearing potential, defined as all women physiologically capable of becoming pregnant, unless they are using effective methods of contraception during dosing of trial treatment and for a minimum of 1 month after their last treatment
16. Males unwilling to use effective methods of contraception during dosing of trial treatment and for at least 3 months after their last dose
17. Patients with clinically significant laboratory abnormalities (not associated with the study indication) at screening including (but not limited to):
  - 17.1. AST or ALT  $> 2.0 \times$  upper limit of normal (ULN) or total bilirubin  $> 1.3 \times$  ULN at screening (with the exception of patients with Gilberts syndrome where suitability for inclusion will be left to the discretion of the local investigator)
  - 17.2. Estimated Glomerular Filtration Rate (eGFR) by the MDRD equation  $< 60 \text{ mL/minute/1.73 m}^2$  at screening

## T2-High Specific Exclusion Criteria:

1. Treatment with pramipexole (Mirapex®) within 4 weeks of baseline
2. Patients where untreated infection with helminthic parasites is suspected by the clinician
3. Concomitant use of drugs known to be associated with significant neutropenia (see Appendix 7, for the list of drugs that should be assessed)
4. Absolute neutrophil count  $< 2.0 \times 10^9/\text{L}$  at screening, or any documented history of absolute neutrophil count  $< 2.0 \times 10^9/\text{L}$  on an NHS electronic pathology system available to the local

investigator within two years of screening

5. Prior history of a neutropenic illness, such as neutropenic sepsis

**T2-Low Specific Exclusion Criteria:**

1. Patients who are unwilling to stay out of the sun or wear sun block

2. History of myasthenia gravis or systemic lupus erythematosus

3. Prior history of 'severe' (as defined by the patient), gastrointestinal intolerance to tetracyclines

4. Documented drug allergy to/ or concurrent use of tetracyclines such as doxycycline and Methoxyflurane or prior anaphylaxis due to tetracyclines

5. Current treatment with anticoagulants such as warfarin

6. Current treatment with long term (defined as  $\geq 3$  months) macrolides for asthma

7. Current use of any prophylactic (defined as  $\geq 3$  months) antibiotic for asthma or any other condition

8. Recent use of any prophylactic antibiotic (defined as  $\geq 3$  months), within 3 months of study entry

9. Current or active exfoliative dermatitis

10. Concurrent use of retinoids due to the increased risk of benign intra-cranial hypertension

11. Participant is unwilling to take the trial medication as it contains beef and pork gelatine is not Halal or Kosher certified or vegetarian/vegan

**Date of first enrolment**

20/08/2021

**Date of final enrolment**

30/06/2022

## **Locations**

**Countries of recruitment**

England

Northern Ireland

Scotland

United Kingdom

Wales

**Study participating centre**

**Glenfield Hospital**

NIHR Leicester Biomedical Research Centre (Respiratory Theme)

Groby Road

Leicester

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LE3 9QP



**Study participating centre**  
**Addenbrooke's Hospital**  
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CB2 0QQ

**Study participating centre**  
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**Study participating centre**  
**Birmingham Heartlands Hospital**  
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United Kingdom  
B9 5SS

**Study participating centre**  
**Churchill Hospital**  
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United Kingdom  
OX3 7LE

**Study participating centre**  
**Gartnavel General Hospital**  
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United Kingdom  
G12 0YN

**Study participating centre**  
**Guy's Hospital**  
Great Maze Pond  
London  
United Kingdom  
SE1 9RT

**Study participating centre**  
**Nottingham City Hospital**  
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Hucknall Road  
Nottingham  
United Kingdom  
NG5 1PB

**Study participating centre**  
**Queen Alexandra Hospital**  
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Portsmouth  
United Kingdom  
PO6 3LY

**Study participating centre**  
**Royal Brompton Hospital**  
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London  
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**Study participating centre**  
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**Study participating centre**  
**St. Bartholomew's Hospital**  
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**Study participating centre**  
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## **Sponsor information**

**Organisation**  
University of Leicester

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**Sponsor type**  
University/education

**Website**

<http://www.le.ac.uk/>

**ROR**

<https://ror.org/04h699437>

## **Funder(s)**

**Funder type**

Government

**Funder Name**

National Institute for Health Research

**Alternative Name(s)**

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

United Kingdom

**Funder Name**

Knopp Biosciences LLC

## **Results and Publications**

**Publication and dissemination plan**

Planned publication in a high-impact peer reviewed journal.

**Intention to publish date**

30/09/2023

**Individual participant data (IPD) sharing plan**

The current data sharing plans for this study are unknown and will be available at a later date.

**IPD sharing plan summary**

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Other unpublished results</a>	BEAT-SA End of Study Report version 1.0	29/07/2024	25/09/2024	No	No