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Understanding patients with elevated pulmonary arterial pressure

Submission date	Recruitment status	[_] Prospectively registered
12/04/2021	No longer recruiting	[X] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
09/06/2021	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
08/06/2026	Circulatory System	

Plain English summary of protocol

Background and aims:
Pulmonary Arterial Hypertension (PAH) is a serious, rare condition caused by a narrowing of the blood vessels (pulmonary artery) that connect the heart to the lungs. This leads to an increase in the pressure inside the pulmonary artery and therefore the heart has to work much harder to move blood through the lungs and body. A diagnosis of pulmonary hypertension occurs when the mean Pulmonary Arterial (PA) pressure is >25mmHg. Pulmonary hypertension is associated with a high chance of disability and death.

However, it is known a mean PA pressure of 21-24mmHg, is abnormal. With a better understanding of the abnormal haemodynamics effect on prognosis, there may be a better chance for clinicians to intervene earlier and change the overall progression of the disease. In this study patients with “mild/borderline” pulmonary hypertension will be identified and the progression of their disease will be studied to determine who might develop definite pulmonary hypertension. It is important to understand this patient group in greater detail. This will safely inform clinical decision making and help develop guidance for this patient cohort, who have abnormal haemodynamics, but do not fulfil the current definition of pulmonary hypertension.

Who can participate?
This study will include data from adult patients who have received multiple right heart catheter (RHC) procedures. Participants will not be approached to take part in this study as it is an observational study of past patient data.

What does the study involve?
This study will collect data of patient and clinical characteristics, biomarkers, therapies and prognosis from the period between 01/01/2009 and 01/03/2020 for patients who fulfil the eligibility criteria.

What are the possible benefits and risks of participating?
Though this study may not benefit participants whose data will be used, it may help researchers to understand this patient group in greater detail and to safely inform clinical decision making and help develop guidance for this patient cohort. No risks are anticipated as part of this study as it will look at past patient data only.

Where is the study run from?
The Royal Free London NHS Foundation Trust (UK) and will collect data from 7 UK hospital sites

When is the study starting and how long is it expected to run for?
From May 20219 to August 2021

Who is funding the study?
Actelion Pharmaceuticals Ltd (Switzerland)

Who is the main contact?
Dr Nina Karia
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Contact information

Type(s)
Scientific

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Additional identifiers

Integrated Research Application System (IRAS)
125796

Study information

Scientific Title
Phenotyping individuals with elevated mean pulmonary arterial pressure and elevated pulmonary vascular resistance in the United Kingdom

Acronym
EVIDENCE-PAH

Study objectives
To understand the patient cohort, with “mild/borderline” pulmonary hypertension (pulmonary arterial pressure between 21 and24mmHg) who do not fulfil the current definition of pulmonary hypertension, and determine who might develop definite pulmonary hypertension, with the aim to safely inform clinical decision making and help develop guidance for this patient cohort.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 23/03/2020, London - Harrow Research Ethics Committee (Level 3, Block B Whitefriars Lewins Mead Bristol BS1 2NT; +44 (0)207 104 8098; harrow.rec@hra.nhs.uk), ref: 20/LO/0344

Primary study design
Observational

Study design
Multicenter retrospective observational cohort study

Study type(s)

Diagnostic

Health condition(s) or problem(s) studied
Pulmonary arterial hypertension

Interventions
This retrospective, observational, multi-center study aims to describe patient and clinical characteristics, biomarkers, therapies, and prognosis of patients categorized into 3 groups based on their Mean pulmonary arterial pressure (mPAP) (<21, ≥21-<25, or ≥25 mmHg) and Pulmonary vascular resistance (PVR) (<2, ≥2-<3, or ≥3 WU) measurements. In addition, quality of life, hospitalization, and mortality data (to be obtained from HES and ONS or ISD in Scotland) will be compared across patient cohorts.

Research teams will collect data on approximately 2,000 patients who had previously undergone a Right Heart Catheterisation (RHC) procedure in one of the participating pulmonary hypertension (PH) specialist centers in a routine clinical practice setting during the eligibility period 01/01/2009 to 31/12/2017 and fulfilled all the inclusion criteria and none of the exclusion criteria.

The first RHC will be the baseline point of data collection and will be compared to their annual follow-up visit data, which will be collected for a maximum of 11 years (01/03/2020) or until the patient's death.

Intervention Type
Other

Primary outcome(s)
1. Hospitalization measured using the incidence of inpatient hospitalization events due to any cause anytime during the observation period (01/01/2009 to 01/03/2020) from retrospective HES and ONS or ISD data collection at a single timepoint
2. Mortality rates measured using the time to all-cause mortality anytime during the observation period (01/01/2009 to 01/03/2020) from retrospective HES and ONS or ISD data collection at a single timepoint

Key secondary outcome(s)
1. Quality of life measured using the Cambridge Pulmonary Hypertension Outcome Review (CAMPHOR) or emPHasis-10 questionnaire anytime during the observation period (01/01/2009 to 01/03/2020) from retrospective HES and ONS or ISD data collection at a single timepoint
2. Progression to Pulmonary Hypertension measured using the date of Right Heart Catheterisation (RHC) anytime during the observation period (01/01/2009 to 01/03/2020) when the measured mPAP is ≥25 mmHg for the first time after the index RHC from retrospective HES and ONS or ISD data collection at a single timepoint

Completion date
31/08/2021

Eligibility

Key inclusion criteria
1. Aged ≥18 years at time of the first right heart catheter (RHC) procedure within the eligibility period

2. ≥1 RHC procedure in one of the pulmonary hypertension specialist or approved centers within the eligibility period

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
100 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. Missing value for mean Pulmonary Arterial Pressure or Pulmonary Vascular Resistance at the right heart catheter (RHC) procedure
2. Received any Pulmonary arterial hypertension medications before the first RHC procedure
3. Lung and/or heart transplant any time before the first RHC procedure
4. Enrolled in any interventional clinical trial with an investigational product within the 3 months prior to, or at the time of, the first RHC procedure within the eligibility period

Date of first enrolment
01/01/2009

Date of final enrolment
01/03/2020

Locations

Countries of recruitment
United Kingdom

England

Scotland

Study participating centre

Royal Free London
Pond St
Hampstead
London
England
NW3 2QG

Study participating centre
Hammersmith Hospital
72 Du Cane Rd
White City
London
England
W12 0HS

Study participating centre
The Royal Brompton Hospital
Sydney St
Chelsea
London
England
SW3 6NP

Study participating centre
Royal Hallamshire Hospital
Glossop Rd
Sheffield
England
S10 2JF

Study participating centre
Freeman Hospital
Freeman Rd
High Heaton
Newcastle upon Tyne
England
NE7 7DN

Study participating centre
Royal Papworth Hospital
Papworth Rd

Cambridge
England
CB2 0AY

Study participating centre
The Golden Jubilee Hospital
Agamemnon St
Clydebank
Glasgow
Scotland
G81 4DY

Sponsor information

Organisation
Royal Free London NHS Foundation Trust

ROR
https://ror.org/04rtdp853

Funder(s)

Funder type
Industry

Funder Name
Actelion Pharmaceuticals

Alternative Name(s)
Actelion Pharmaceuticals Ltd

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
Switzerland

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be stored in a non-publically available repository (PAH tool database). Aggregate data will be shared with study funder Actelion Pharmaceuticals at the end of the study. Consent from participants was not obtained as this would bias the data. Study was reviewed and approved under section 251 support by the Confidentiality Advisory Group, allowing for the processing of confidential patient information without consent. All study data will be anonymised.

IPD sharing plan summary

Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		21/11/2023	19/07/2024	Yes	No
HRA research summary			28/06/2023	No	No
Other publications		08/06/2026	08/06/2026	Yes	No
Protocol file	version v3.0	05/11/2020	10/06/2021	No	No
Protocol file	version v4.0	19/05/2021	01/07/2021	No	No