REACT-AUS: REsistant And Hard-to-Control HyperTension in AUStralia

First published: 06/03/2026

Last updated: 06/03/2026

Study Ongoing

Administrative details

EU PAS number

EUPAS1000000943

Study ID

1000000943

DARWIN EU® study

No

Study countries

Australia

Study description

This is a real-world observational study using primary care data from Australia (Optimum Patient Care Research Database Australia [OPCRDA]) to (1) quantify prescribing patterns and treatment trajectories of hypertension patients over

time and how they align with Guidelines Directed Medical Therapy (GDMT) (2) To explore factors that drive treatment choices for hard-to-control/resistant hypertension (3) To quantify the prevalence of hard-to-control/resistant hypertension and length of time with hypertension before meeting hard-to-control/resistant status

All adults (≥18 years and <85 years) with high blood pressure measurement (systolic blood pressure ≥140mmHg and/or diastolic blood pressure≥90mmHg) with ≥2 antihypertension treatments in the previous 1–4 months between 2006 and 2025 will be identified. For hard-to-control hypertension, index date will be the first date of a high blood pressure measurement with ≥2 antihypertensive therapies in the previous 1–4 months. For resistant hypertension, index date will be the first date of a high blood pressure measurement with ≥3 antihypertensive therapies in the previous 1–4 months. The same patient can be included as having hard-to-control and resistant hypertension where they step up from 2 antihypertensive therapies, but their blood pressure remains uncontrolled.

We will investigate characteristics of patients within the first 12 months of receiving their first hard-to-control and/or resistant hypertension event in the observation window. Patients will be followed up for a maximum of 12 months from their hard-to-control/resistant blood pressure measurement.

Study status

Ongoing

Research institutions and networks

Institutions

Observational & Pragmatic Research Institute Pte (OPRI)

United Kingdom

First published: 06/10/2015

Last updated: 19/08/2024

Institution | Educational Institution | Laboratory/Research/Testing facility | ENCePP partner

Optimum Patient Care Australia (OPCA)

Contact details

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Primary lead investigator

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Study timelines

Date when funding contract was signed
Planned: 13/11/2025

Actual: 13/11/2025

Study start date
Planned: 31/01/2026

Actual: 31/01/2026

Data analysis start date
Planned: 12/02/2026

Date of final study report
Planned: 31/03/2026

Sources of funding

- Pharmaceutical company and other private sector

More details on funding

AstraZeneca Australia, Optimum Patient Care Australia and Observational & Pragmatic Research Institute

Study protocol

REACT-AUS (Hypertension)_Protocol_V4.0.pdf (1.34 MB)

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study type list

Study topic:

Disease /health condition

Human medicinal product

Study topic, other:

Chronic obstructive pulmonary disease (COPD)

Study type:

Non-interventional study

Scope of the study:

Disease epidemiology

Drug utilisation

Hypothesis generation (including signal detection)

Data collection methods:

Primary data collection

Study design:

Observational cohort study using the Optimum Patient Care Research Database Australia (OPCRDA).

Main study objective:

To quantify the prevalence of hard-to-control/resistant hypertension and explore factors that drive treatment choices

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Medicinal product name, other

All antihypertensive medications, including alpha-2 adrenergic receptor agonists, angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers; angiotensin receptor-neprilysin inhibitors; calcium channel blockers, mineralocorticoid receptor antagonists; diuretics; vasodilators

Anatomical Therapeutic Chemical (ATC) code

(C02) ANTIHYPERTENSIVES

ANTIHYPERTENSIVES

Medical condition to be studied

Hypertension

Population studied

Short description of the study population

All adults (≥18 years and <85 years) with high blood pressure measurement (SBP ≥140mmHg and/or DBP≥90mmHg) with ≥2 antihypertension treatments in the previous 1–4 months between 2006 and 2025 will be identified. For hard-to-control hypertension, index date will be the first date of a high blood pressure measurement with ≥2 antihypertensive therapies in the previous 1–4 months. For resistant hypertension, index date will be the first date of a high blood pressure measurement with ≥3 antihypertensive therapies in the previous 1–4 months. The same patient can be included as having hard-to-control and resistant hypertension where they step up from 2 antihypertensive therapies, but their blood pressure remains uncontrolled.

Age groups

- **Adult and elderly population (≥18 years)**
  - Adults (18 to < 65 years)
    - Adults (18 to < 46 years)
    - Adults (46 to < 65 years)
  - Elderly (≥ 65 years)
    - Adults (65 to < 75 years)
    - Adults (75 to < 85 years)
    - Adults (85 years and over)

Special population of interest, other

People with hypertension

Study design details

Setting

This observational cohort study uses data from Australian primary care electronic medical records from the Optimum Patient Care Research Database Australia (OPCRDA). The OPCRDA is a real-world, longitudinal, research database that is maintained by Optimum Patient Care Australia (OPCA). It contains anonymised health data from over one million patients from primary care across Australia.

Comparators

Comparators within subgroups of covariates (e.g. treatments) will be investigated but all patients will have hard-to-control/resistant hypertension.

Outcomes

1. Hard-to-control hypertension
2. Resistant hypertension
3. Individual treatments prescribed for hard-to-control hypertension
4. Individual treatments prescribed for resistant hypertension
5. Antihypertensive treatment classes for hard-to-control hypertension
6. Antihypertensive treatment classes for resistant hypertension
7. Time since first high blood pressure measurement (i.e. burden of hypertension)

Data analysis plan

The baseline characteristics of the study population will be described.

Aim 1: Prescribing patterns and treatment trajectories of hypertension patients

Individual antihypertensive therapies, antihypertensive drug classes and antihypertensive drug class regimens prescribed for patients with hard-to-control and resistant hypertension will be investigated during the 12-month

follow-up period using proportions and Wilson confidence intervals. We will investigate if the distribution of medications has changed over calendar time to evaluate potential cohort effects. We will also compare treatment choices with guidelines. These approaches will be mainly descriptive.

Aim 2: Factors driving treatment choices for hard-to-control/resistant hypertension

The relationship between the most common individual antihypertensive regimens (outcome measure) for hard-to-control/resistant hypertension, blood pressure control status, clinical characteristics, comorbidities and concomitant medications, patient adherence and time to step-up to add-on therapies will be investigated using multi-level generalised linear models, allowing for clustering by practice ID (random effect).

Aim 3: Prevalence of hard-to-control/resistant hypertension and length of time with hypertension before meeting hard-to-control/resistant status

Additional objectives will be achieved using descriptive statistics of the number and characteristics of patients with hard-to-control hypertension and resistant hypertension, also looking at any differences across time and by age/gender distributions. Among those who have been clinically active (consultation/prescription) in previous 5 years (2011 onwards), we will investigate length of time (categorised) between first hypertension measurement and resistant/hard-to-control status and from hard-to-control to resistant hypertension status.

Summary results

Findings from this study will be reported and presented at the Pharmaceutical Benefits Advisory Committee (PBAC) by May 2026.

Data management

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Data sources

Data sources (types)

Electronic healthcare records (EHR)

Other

Data sources (types), other

Primary care data (OPCRDA)

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No