

Multi-centre randomised controlled trial to investigate the efficacy of nasal continuous positive airway pressure treatment to reduce cardiovascular risk and symptoms in mild to moderate sleep apnoea

Submission date 16/09/2005	Recruitment status No longer recruiting	☒ Prospectively registered ☐ Protocol
Registration date 05/10/2005	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 18/03/2016	Condition category Nervous System Diseases	☐ Individual participant data

Plain English summary of protocol

http://www.ctu.mrc.ac.uk/research_areas/study_details.aspx?s=19

Contact information

Type(s)

Scientific

Contact name

Prof John Stradling

Contact details

Oxford Sleep Unit
Churchill Hospital
Old Road
Headington
Oxford
United Kingdom
OX3 7LJ

Additional identifiers

Protocol serial number

MOSAIC 1

Study information

Scientific Title

Multi-centre randomised controlled trial to investigate the efficacy of nasal continuous positive airway pressure treatment to reduce cardiovascular risk and symptoms in mild to moderate sleep apnoea

Acronym

Multi-centre Obstructive Sleep Apnoea Interventional Cardiovascular Trial (MOSAIC)

Study objectives

Patients with Obstructive Sleep Apnoea (OSA) are treated with nasal continuous positive airway pressure (CPAP) to control excessive daytime sleepiness, and to reduce vascular risk by improving blood pressure (BP), and possibly other vascular risk factors. Randomised trials for one month have shown falls in BP following treatment for disease at the more severe end of the spectrum, but not for less severe disease where treatment benefits are currently unproven. If the treatment of less severe disease produces similar benefits, this will be a substantial therapeutic advance in vascular risk reduction, since this disease affects up to 6% of men. If ineffective, the substantial treatment costs would be better directed elsewhere. The randomised trial proposed here will determine whether treating less severe sleep apnoea reduces calculated vascular risk, surrogate measures of cardiovascular disease, symptomatic benefits, and will determine the feasibility of a subsequent phase 3, long-term, trial to quantify any actual reduction in vascular event rate.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Oxfordshire REC A, 15/12/2005, ref: 05/Q1604/159

Primary study design

Interventional

Study design

Multi-centre randomised controlled

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Sleep apnoea

Interventions

Nasal CPAP machines versus no intervention

Intervention Type

Device

Primary outcome(s)

1. Reduction in the cardiovascular risk using the Framingham score
2. Reduction in Epworth Sleepiness Score

Key secondary outcome(s)

1. Fall in insulin resistance
2. Fall in HbA1c
3. Platelet activation
4. BP variability
5. Fasting triglycerides
6. Obesity and its distribution
7. Carotid wall volume
8. Brain magnetic resonance imaging (MRI) indices of hypertensive damage
9. Diastolic function
10. Pulse wave analysis
11. Reduction in adverse cardiovascular events
12. Improvement in self assessed health status and ability to resist sleep
13. Reduction health services utilisation

Completion date

02/01/2009

Eligibility**Key inclusion criteria**

1. Objectively confirmed obstructive sleep apnoea on respiratory polysomnography, with a >4% arterial oxygen desaturation index of >7.5/hour
2. Written informed consent

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

Male

Key exclusion criteria

1. Sleep apnoea symptoms of sufficient severity that CPAP is mandated by current trial evidence, such that randomisation to a control would be unethical (this decision is in the hands of the randomising physician as the equipoise point varies between units, but guidance on this is presented later)
2. Ventilatory failure (awake resting arterial oxygen saturation <93% or arterial pCO₂ >6kPa)
3. Clinic BP more than 180/110
4. Cheyne-Stokes breathing on respiratory polysomnography
5. Current Heavy Goods Vehicle or Public Service Vehicle driving licence holder

6. Any sleep related accident
7. Age <45 or >75 years at trial entry (age range selected as it is typical for patients with OSA and will have a significant cardiovascular event rate)
8. Previous exposure to CPAP or non-invasive ventilation
9. Mental or physical disability precluding informed consent or compliance with the protocol for the duration of the study
10. Non-feasible trial follow-up (for example, distance from follow-up centre, physical inability)
11. Any co-incidental illness making survival for two years unlikely

Date of first enrolment

02/01/2006

Date of final enrolment

02/01/2009

Locations

Countries of recruitment

United Kingdom

England

Study participating centre

Churchill Hospital

Oxford

United Kingdom

OX3 7LJ

Sponsor information

Organisation

Oxford Radcliffe Hospitals NHS Trust (UK)

ROR

<https://ror.org/03h2bh287>

Funder(s)

Funder type

Charity

Funder Name

British Heart Foundation (UK) - PG/05/068

Alternative Name(s)

The British Heart Foundation, the_bhf, BHF

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

United Kingdom

Results and Publications

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

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/12/2012		Yes	No
Results article	results	01/09/2013		Yes	No
Results article	substudy results	01/09/2013		Yes	No
Results article	results	01/10/2014		Yes	No
Results article	results	01/02/2015		Yes	No
Results article	results	15/09/2015		Yes	No
Results article	results	16/03/2016		Yes	No