

Randomised controlled trial of BiPAP autoSV™ therapy in patients with chronic heart failure and sleep-disordered breathing

Submission date 26/04/2007	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered
Registration date 16/05/2007	Overall study status Completed	<input type="checkbox"/> Protocol
Last Edited 26/06/2014	Condition category Circulatory System	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

Contact name

Prof Michael Pfeifer

Contact details

Klinik und Poliklinik für Innere Medizin II
University of Regensburg
Franz-Josef-Strauß-Allee 11
Regensburg
Germany
93042 Regensburg

Additional identifiers

Protocol serial number

RI-SDBHF-2006-02

Study information

Scientific Title

Study objectives

The application of BiPAP autoSV™ to patients with Heart Failure (HF) and Sleep Disordered Breathing (SDB) will:

1. Improve daytime left ventricular ejection fraction
2. Improve exercise capacity, daytime activity, daily symptoms of HF and SDB and oxygen saturation
3. Decrease both the central and obstructive component of the Apnoea-Hypopnoea Index (AHI), B-type natriuretic peptide levels and ventilation during exercise

Ethics approval required

Old ethics approval format

Ethics approval(s)

This study has been approved by the ethics committees of all four sites:

1. Germany (University of Regensburg) - Protocol approved by the Ethikkommission an der Universität Regensburg on 12th April 2007 (ref: 07/011)
2. UK (Prince Phillip Hospital) - Protocol approved by Dyfed Powys Local Research Ethics Committee on 2nd January 2007 (ref: 06/WMW01/57)
3. France (Clamart Hospital) - Protocol approved by the Comité de Protection des Personnes Ile-de-France VII on 14th March 2007 (ref: 2007-A00014-49)
4. Canada (Hopital laval) - Protocol approved by the Comité d'éthique de la recherche de l'Hopital Laval on 11th April 2007 (ref: 20157)

Study design

Randomised parallel open-label trial with blinded evaluation of outcomes

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Heart failure with sleep disordered breathing

Interventions

This is a randomised parallel, open-label trial with blinded evaluation of outcomes involving four centres of 12 weeks BiPAP autoSV™ and optimal medical management versus optimal medical management alone. The BiPAP autoSV™ is intended to augment breathing by supplying pressurised air through a patient circuit. It senses the patients breathing effort by monitoring airflow in the patient circuit and adjusts its output to assist in inspiration and expiration. This assistance is provided by the administration of two levels of positive pressure. During expiration, pressure is variable positive or near ambient. During inspiration, pressure is variable positive and always higher than the expiratory level.

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

Left ventricular ejection fraction, measured at baseline and three months.

Key secondary outcome(s)

1. Six-minute walk test
2. Borg Scale
3. Minnesota Living with Heart Failure Questionnaire (MLHFQ)
4. Functional Outcomes of Sleep Questionnaire (FOSQ)
5. 36-item Short Form health survey (SF-36)
6. Fatigue severity scale
7. Epworth sleepiness scale
8. The Apnoea-Hypopnoea Index (AHI)
9. Obstructive AHI
10. Central AHI
11. Mean oxygen saturation
12. Daytime activity
13. Glomerular filtration rate
14. B-type natriuretic peptide cardiopulmonary exercise test

All secondary outcomes measured at baseline and three months.

Completion date

31/12/2008

Eligibility

Key inclusion criteria

1. HF due to ischaemic, non-ischaemic or hypertensive cardiomyopathy diagnosed by a cardiologist
2. Aged 18 to 80 years
3. Impaired exercise capacity (New York Heart Association [NYHA] class II or III)
4. Objectively impaired left ventricular ejection fraction less than 40%, assessed by echocardiography
5. Stable clinical status and stable optimal medical therapy according to the guidelines of the European Society of Cardiology for at least four weeks
6. An AHI greater than or equal to 20 per hour of sleep assessed by in-laboratory polysomnography
7. Written informed consent

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Upper age limit

80 years

Sex

Not Specified

Key exclusion criteria

1. Unstable angina, myocardial infarction, cardiac surgery or hospital admissions within the previous three months
2. NYHA class I or IV
3. Pregnancy
4. Contraindications for BiPAP autoSV™:
 - a. mean supine Blood Pressure [BP] less than 60 mmHg
 - b. inability to clear secretions
 - c. patients at risk for aspiration of gastric contents
 - d. history of pneumothorax and/or pneumomediastinum
 - e. a history of epistaxis
 - f. causing pulmonary aspiration of blood
5. Patients on or with indication for oxygen therapy
6. Severe restrictive and obstructive airways disease
7. HF due to primary valve disease
8. Awaiting heart transplant
9. Inability or unwillingness to provide written informed consent
10. Diurnal symptoms of SDB requiring immediate treatment

Date of first enrolment

21/04/2007

Date of final enrolment

31/12/2008

Locations**Countries of recruitment**

United Kingdom

Canada

France

Germany

Study participating centre

Klinik und Poliklinik für Innere Medizin II

Regensburg

Germany

93042 Regensburg

Sponsor information

Organisation

Respironics Inc. (USA)

ROR

<https://ror.org/03kw6wr76>

Funder(s)

Funder type

Industry

Funder Name

Respironics International, Inc. (France)

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	01/11/2013		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes