A Multi-center, Prospective, Randomized, Controlled Trial of Endobronchial Valve (EBV) Therapy vs. Standard of Care (SoC) in Heterogeneous Emphysema.

Published: 14-03-2016
Last updated: 17-04-2024

To compare the clinical outcomes of Endoscopic Lung Volume Reduction (ELVR) using the Pulmonx Zephyr Endobronchial Valve (EBV) vs. Standard of Care (SoC) in the treatment of heterogeneous emphysema subject in a controlled trial design setting.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Respiratory disorders NEC
Study type	Interventional

Summary

ID

NL-OMON43476

Source
ToetsingOnline

Brief title
TRANSFORM

Condition

- Respiratory disorders NEC

Synonym
COPD emphysema

Research involving
Human

Sponsors and support

Primary sponsor: Pulmonx International Sarl
Source(s) of monetary or material Support: Pulmonx International Sarl;Zwitserland

Intervention

Keyword: Bronchoscopy, COPD, Lung volume reduction, Valves

Outcome measures

Primary outcome

The percentage of Trial participants in the EBV treatment arm meeting the minimally clinically important difference (MCID) of >12% improved forced expiratory volume in one second (FEV1), obtained immediately following bronchodilator therapy, as compared to the percentage in the control arm at 3 months post-procedure.

Secondary outcome

Secondary

• Absolute and percentage change in the SGRQ in the EBV treatment arm at 3, 6, 12, 18 and 24 months relative to baseline and the difference between the two arms at 3, 6 and 12 months.

• Percentage of subject achieving the MCID for SGRQ in the EBV treatment arm at 3, 6, 12, 18 and 24 months, compared to SoC at 3, 6 and 12 months.

• Absolute and percentage change in 6MWT in the EBV treatment arm at 3, 6, 12, 18, 24 months relative to baseline and the difference between the two arms at 3, 6 and 12 months.

• Percentage of subject achieving the MCID for 6MWT in the EBV treatment arm at 3, 6, 12, 18 and 24 months, compared to SoC at 3, 6 and 12 months.

• Absolute and percentage change in FEV1 in the EBV treatment arm at 3, 6, 12, 18, 24 months relative to baseline and the difference between the two arms at 6 and 12 months.

• Percentage of subject achieving the MCID for FEV1 in the EBV treatment arm at 6, 12, 18 and 24 months, compared to SoC at 6 and 12 months.

• Percentage of subject in the EBV treatment arm achieving the MCID for the Modified Medical Research Council Dyspnoea Score (mMRC) at 3, 6, 12, 18 and 24 months and the difference between the two arms at 3, 6 and 12 months.

• Absolute and percentage change in target lobe volume at 45 days in the EBV treatment arm relative to baseline as assessed by quantitative HRCT analysis (TLVR: Target Lobar Volume Reduction).

• Percentage of subjects in EBV arm with a TLVR > 350ml at 45 days relative to baseline.

Tertiary:

• Absolute and percentage change in residual volume (RV) in the EBV treatment arm at 3, 6 and 12, 18 and 24 months relative to baseline and the difference between the two arms at 3, 6 and 12 months.

• Absolute and percentage change relative to baseline in the EBV treatment arm at 3, 6, 12, 18 and 24 months of the EQ-5D summary index and the difference between the two arms at, 3, 6 and 12 months.

• Adverse events (condition/procedure related AE*s, SAE*s, ADE*s and SADE*s) occurring up to 24 months post EBV placement

• Percentage distribution of surface area ratio between target lobe and the

adjacent lobe(s) and FEV1 outcomes.

• Absolute and percentage change in paO2 in the EBV treatment arm at 3 months

relative to baseline.

• Any additional hospitalizations and/or visits caused by respiratory

conditions during the study period will be recorded for health economical

purposes in both treatment and control subjects.

Study description

Background summary

Patients with severe emphysema suffer from severe dyspnea and a poor quality of life, with no current effective medical treatment. Only for a very small, highly selective group of COPD patients, very invasive surgical procedures like lung volume reduction surgery (LVRS) or lungtransplantation are available. Minimally invasive bronchoscopic lung volume reduction (BLVR) techniques through the implantation of one-way valves have now been established as a means of treating the hyperinflation of emphysema for a group of selected patients.clinical evidence indicates that by achieving lobar occlusion in the absence of collateral ventilation, significant lung volume reduction can be obtained with associated good clinical responses. The Chartis Pulmonary Assessment System which assesses collateral ventilation has shown 75% accuracy in predicting response.

Study objective

To compare the clinical outcomes of Endoscopic Lung Volume Reduction (ELVR) using the Pulmonx Zephyr Endobronchial Valve (EBV) vs. Standard of Care (SoC) in the treatment of heterogeneous emphysema subject in a controlled trial design setting.

Study design

This is a prospective, randomized, controlled, two-armed multi-center trial. Subjects in the SoC group will be offered to receive EBVs after completing the 6 months follow up, or before 6 months if the clinical condition of the individual patient deteriorates and valve placement is required as per the decision of the treating physician.

Intervention

The Pulmonx Zephyr Endobronchial Valve (EBV) is an implantable bronchial valve intended to decrease volume in targeted regions of the lung. It is indicated for the treatment of patients with hyperinflation associated with severe heterogeneous emphysema in regions of the lung that have little or no collateral ventilation as assessed by the Chartis System.

Study burden and risks

The patients that will be included in the study will have to come to our outpatient clinic, perform pulmonary function testing, a 6 min walking test, HRCT scanning, thoracic x-ray, fill in questionnaires and testing of blood samples and arterial blood gas. For the actual treatment with bronchoscopy under general anesthesia the patients will stay 6 nights in our hospital. For the follow-up, the patients will visit the hospital (7x or 3x), which will include 1 CT scan and pulmonary function tests, questionnaires and exercise testing (6MWT). The included patients will have to put large effort in the study, but is in balance with the expected outcome and very limited compared 'alternative' treatments like highly invasive surgery: Lung volume reduction surgery or Lung transplantation. All included patients have a severe limitation of their activities of daily living. With the development and validation of the use of the lung volume reduction treatment with the placement of valves, does it seem possible to give relieve of shortness of breath and improvement in exercise performance. Furthermore, this technique can be used as a 'bridge' to lung transplantation in future, or will be the only possible therapeutic tool available by them. The risks are not bigger than the risks any individual has for the investigations described. The treatment with the valves and inducing the significant volume reduction the major risks involved are: Pneumothorax (1 in 4 patients) for which chest drainage is required, transient (1-3 days) chest pain (1 in 2 patients), transient (1-7 days) and dyspnea (1 in 4 patients).

Contacts

Public
Pulmonx International Sarl

Rue de la Treille 4
Neuchatel 2000
CH
Scientific
Pulmonx International Sarl

Rue de la Treille 4

Neuchatel 2000
CH

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

1. Obtained informed consent.
2. Diagnosis of heterogeneous emphysema with a heterogeneity index of >=10 % between target and adjacent lobes.
3. Subjects of both genders of at least 40 years of age.
4. 15 % predicted <= FEV1<= 45% predicted.
5. TLC > 100% and RV >= 180% predicted.
6. 150 meters < 6MWT < 450 meters.
7. Non-smoker >8 weeks prior to signing the Informed Consent.
8. CV negative target lobe.

Exclusion criteria

1. Any contraindication for bronchoscopic procedure.
2. Evidence of active pulmonary infection.
3. History of 2 or more exacerbations requiring hospitalization over the past 12 months.
4. Known Pulmonary hypertension that according to the physician will be unsuitable for EBV treatment.
5. Myocardial infarction or other relevant cardiovascular events in the past 6 months.
6. Significant bronchiectasis seen at CT scan.
7. Greater than two tablespoons of sputum production per day.
8. Prior LVR or LVRS procedure.
9. Pulmonary nodule requiring follow-up within any lobe.
10. Pregnant or nursing women.
11. Hypercapnia (paCO2 > 7.33 kPa).

12. Current diagnosis of asthma.
13. > 25mg Prednisolon (or equivalent) use/days.
14. Any other condition that as judged by the investigator may make follow-up or investigations inappropriate.
15. Evidence of pleural adhesions or earlier pulmonary surgery.
16. Severe Bulleous Emphysema (> 1/3 Hemithorax)
17. Any subject that according to the Declaration of Helsinki is unsuitable for enrollment.

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	16-03-2016
Enrollment:	18
Type:	Actual

Medical products/devices used

Generic name:	Endobronchial one-way valve (Zephyr)
Registration:	Yes - CE intended use

Ethics review

Approved WMO

Date:	14-03-2016
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
ClinicalTrials.gov	NCT02022683
CCMO	NL56114.042.16