

Introduction: Although pulmonary endarterectomy (PEA) is the first-line treatment for chronic thromboembolic pulmonary hypertension (CTEPH), a significant number of patients will have inoperable disease or residual pulmonary hypertension (PH). Balloon pulmonary angioplasty (BPA) has provided a new therapeutic option for these patients.

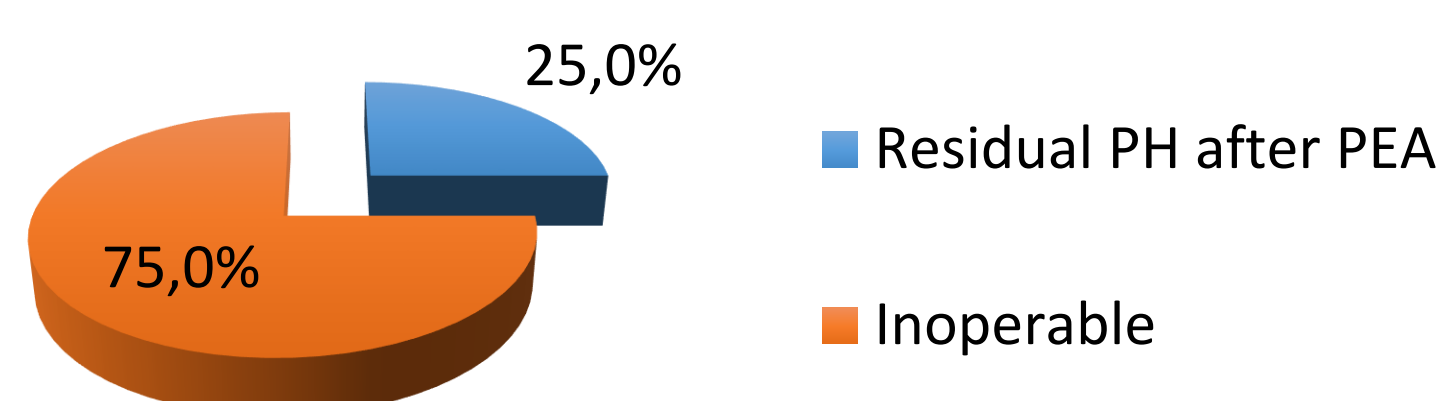
Purpose: To characterize the initial experience of BPA and the safety profile of this technique in a referral centre for PH.

Methods:

- Observational, prospective, single center study
- Patients with CTEPH submitted to BPA
- December 2017 to May 2018
- Continuous variables: Mean \pm Standard deviation (SD)
- Categorical variables: Percentage
- IBM® SPSS® Statistics (version 24)

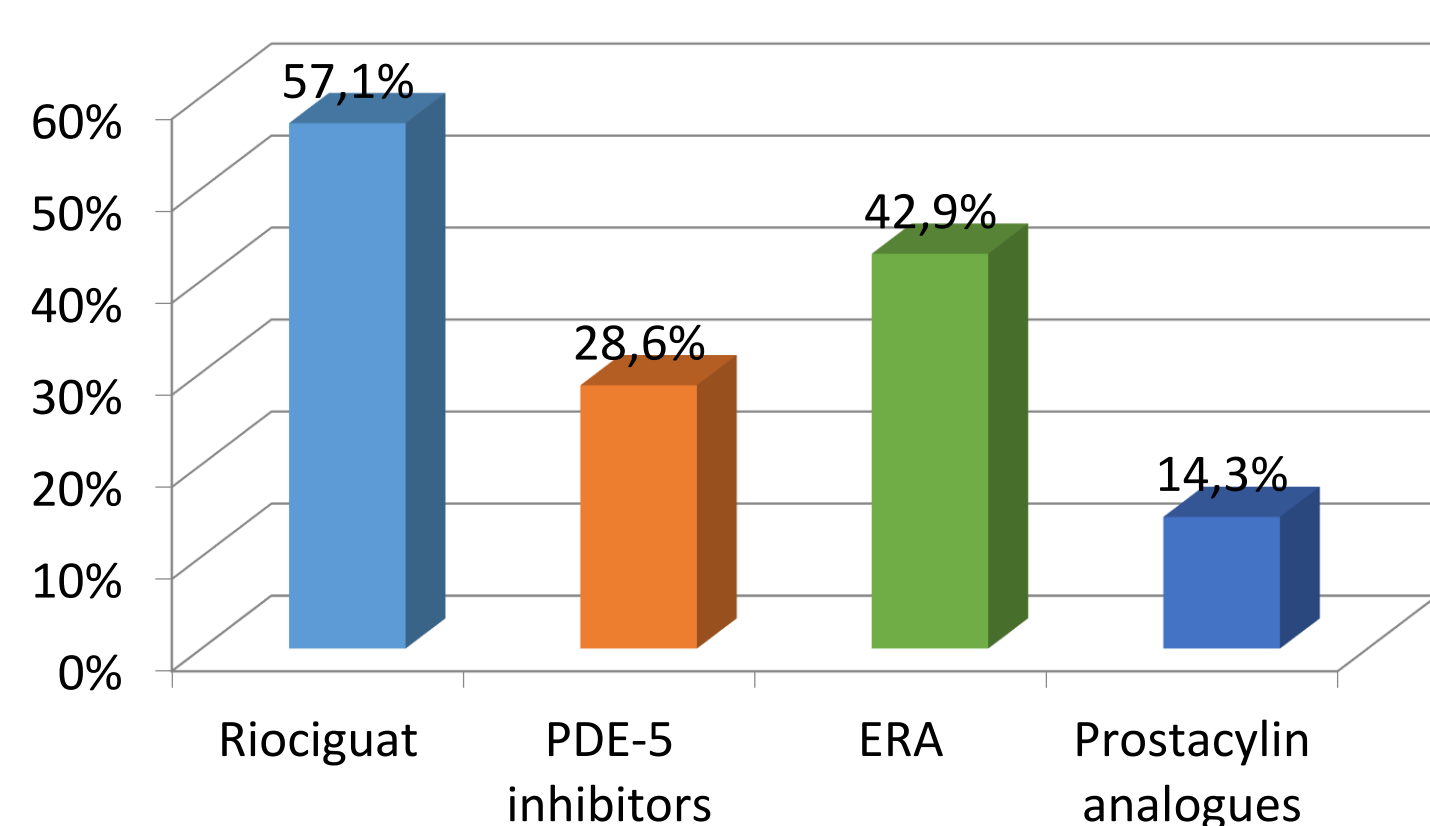
Results:

8 patients, 30 BPA interventions
 Mean age 64.5 ± 11.8 years, 76.7% ♀
 Follow-up: 1305 ± 932 days since the first outpatient evaluation and 104 ± 76 days since the first BPA session



Baseline characteristics

Pulmonary vasodilator therapy	87.5%
WHO functional class II / III	83.3% / 13.3%
Distance in the 6-minute walk test – mean \pm SD (meters)	431 ± 77
NT-proBNP – mean \pm SD (pg/ml)	269 ± 181



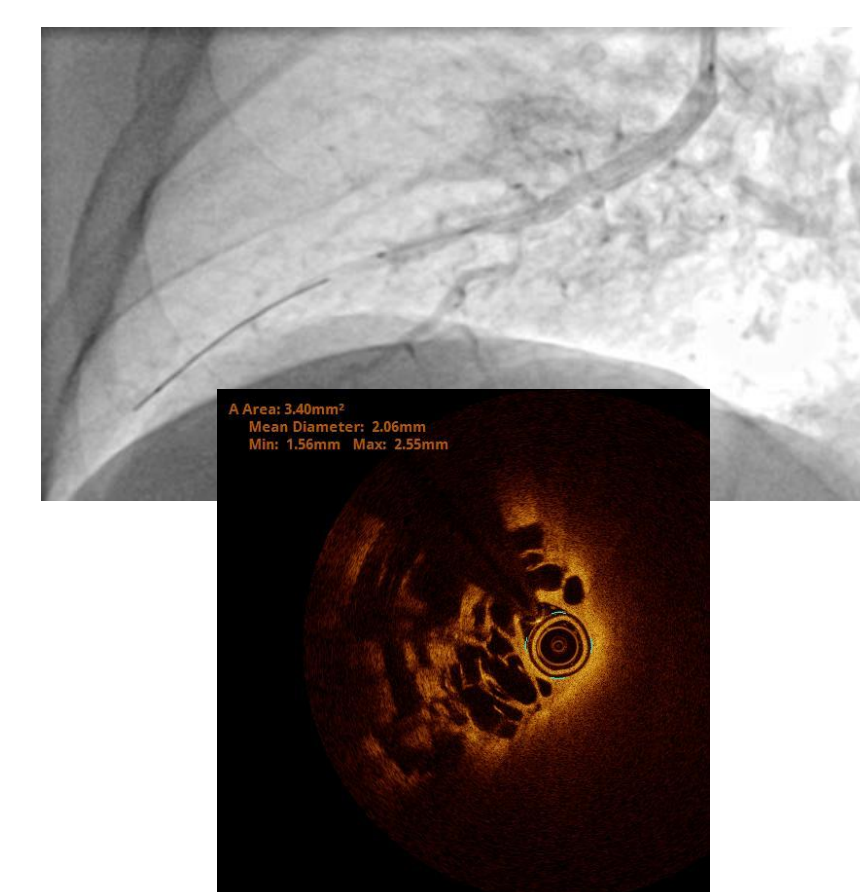
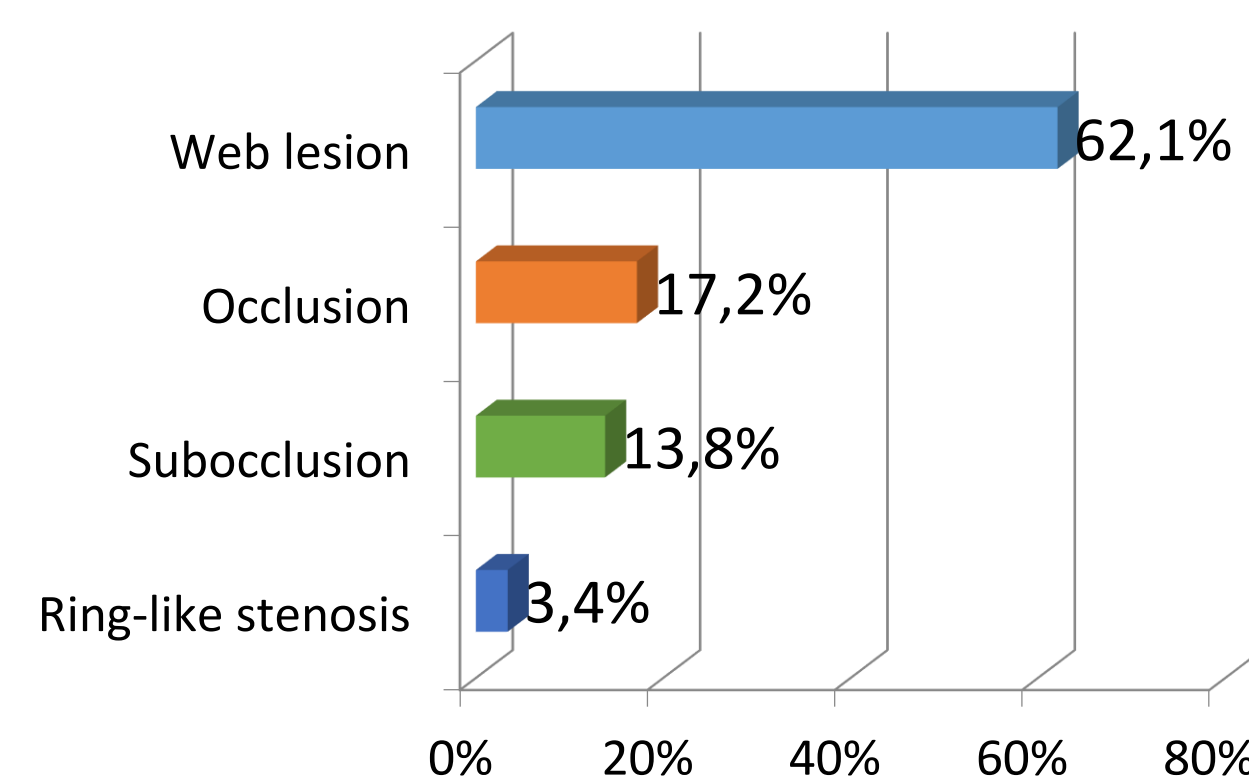
Results:

Baseline right heart catheterization data

Cardiac index – mean \pm SD (l/min/m ²)	2.8 ± 0.6
Mean pulmonary artery pressure – mean \pm SD (mmHg)	30.7 ± 9.2
Pulmonary vascular resistance – mean \pm SD (Wood units)	4.2 ± 2.4

Mean number of sessions per patient 4.7 ± 1.5

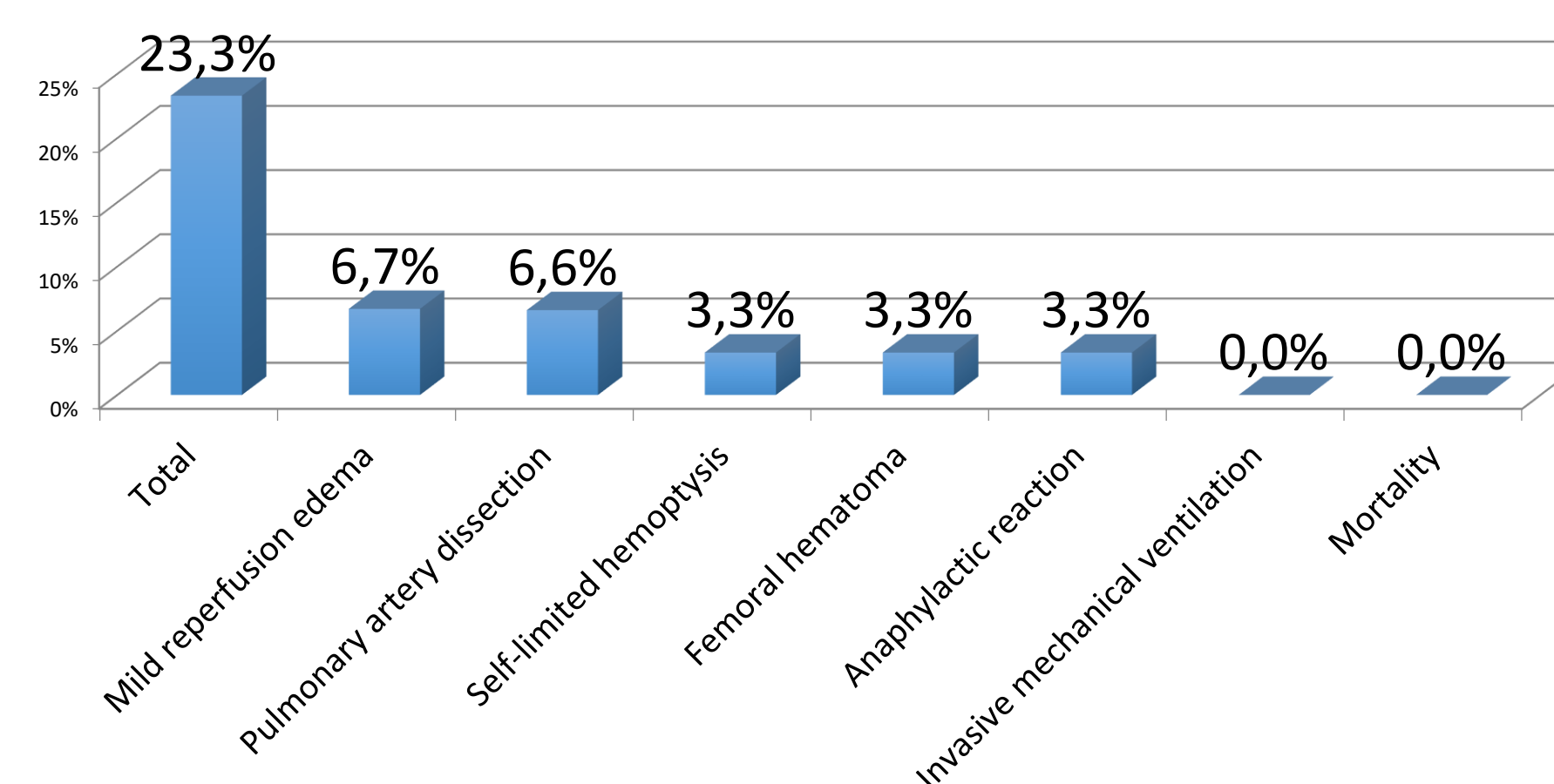
Mean number of segments treated per patient 8.1 ± 4.3



Intervention data

Number of balloons used – mean \pm SD	2.5 ± 0.9
Balloon maximum diameter – mean \pm SD (mm)	4.2 ± 1.3
Pressure-wire guided angioplasty	24.1%
Use of intravascular imaging (optical coherence tomography or intravascular ultrasound)	10.3%

Procedure-related adverse events



Right heart catheterization data before the last BPA session

Cardiac index – mean \pm SD (l/min/m ²)	2.8 ± 0.5
Mean pulmonary artery pressure – mean \pm SD (mmHg)	24.0 ± 4.8
Pulmonary vascular resistance – mean \pm SD (Wood units)	3.3 ± 1.1

- So far, BPA was considered complete in four patients
- The efficacy of BPA will be assessed after 6 months of follow-up

Conclusions: BPA resulted in haemodynamic and clinical improvement and was also associated with a reduced number of significant complications. As the impact of BPA on survival is still unknown, randomised controlled trials comparing BPA with approved medical therapies in patients with inoperable CTEPH are required to allow appropriate risk-benefit assessments.