

## **PREDICTIVE FACTORS FOR SUCCESS OF PULMONARY ENDARTERECTOMY (PEA) IN CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION (CTEPH)**

C Tromeur, X Jais, O Mercier, D Montani, L Savale, S Gunther, E Artaud-Macari, O Sitbon, E Fadel, S Mussot, M Humbert, P Dartevelle, F Couturaud, G Simonneau.

**Objectives:** To assess outcome after PEA and identify 1) factors affecting short and long-term survival; 2) predictive factors of hemodynamics and NYHA functional class improvement.

**Patients and Methods:** A total of 190 consecutive patients who underwent PEA between 2005 and 2009 were retrospectively reviewed. Forty patients were not analysed due to lost to follow-up or lacking data. A total of 150 patients (83 F; age  $60\pm 14$  y) were evaluated before and  $7.5\pm 1$  months after PEA by NYHA class, 6-minute walk distance (6MWD) and right heart catheterisation. Before PEA, 114/150 patients (76%) were in NYHA class III or IV, mean 6MWD was  $313\pm 158$  m and pulmonary vascular resistance (PVR) was  $755\pm 346$  dyn.s.cm<sup>-5</sup>. A multivariate analysis was performed to identify preoperative independent predictive factors for mortality and improvement of hemodynamics and NYHA functional class.

**Results :** Mortality rate at 1 month, 1 year and 3 years after PEA was 2.8%, 6.9% and 7.5% respectively. Preoperative PVR was predictive of 1-month, 1- and 3-year mortality and age was the other predictive factor of mortality at 1- and 3-year. At  $7.5\pm 1$  months after PEA, an improvement in NYHA class (80% in NYHA I or II) and 6MWD ( $313\pm 158$  vs.  $399\pm 146$  m;  $p<0.001$ ) was observed and PVR decreased from  $775\pm 346$  to  $307\pm 221$  dyn.s.cm<sup>-5</sup> ( $p<0.001$ ). In 96 patients (64%), postoperative PVR decreased by at least 50% and/or was reduced to lower than 250 dyn.s.cm<sup>-5</sup>. Preoperative PVR and carbon monoxide transfer factor ( $T_{LCO}$ )

were identified as independent predictive factors of hemodynamics and NYHA functional class improvement.

**Conclusion:** PEA is associated with an excellent long-term survival and a marked improvement in clinical status and hemodynamics in most cases. High preoperative PVR and/or low  $T_{LCO}$  might predict inadequate postoperative hemodynamics and NYHA functional class.

**Affiliations:**

C Tromeur : Université de Bretagne Occidentale, Hôpital La Cavale-Blanche, Brest, France

X Jaïs : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

O Mercier : Université Paris-Sud, Centre Chirurgical Marie Lannelongue, Le Plessis-Robinson, France.

D Montani : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

L Savale : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

S Gunther : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

E Artaud-Macari : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

O Sitbon : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

E Fadel : Université Paris-Sud, Centre Chirurgical Marie Lannelongue, Le Plessis-Robinson, France.

S Mussot : Université Paris-Sud, Centre Chirurgical Marie Lannelongue, Le Plessis-Robinson, France.

M Humbert : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

P Darteville : Université Paris-Sud, Centre Chirurgical Marie Lannelongue, Le Plessis-Robinson, France.

F Couturaud : Université de Bretagne Occidentale, Hôpital La Cavale-Blanche, Brest, France

G Simonneau : Université Paris-Sud, Hôpital Bicêtre, Le Kremlin-Bicêtre, France

