Pulmonary hypertension as an independent factor for increased 28-day mortality in Lung transplantation

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Introduction

Pulmonary hypertension (mean pulmonary artery pressure(mPAP) >25 mm Hg) is frequently reported in patients (pts) planned for lung transplantation (LT). The role of mPAP as a risk factor for increased 28-day mortality following LT is debated. We analyzed the role of mPAP in the perioperative period of a cohort of LT patients. The mPAP assessed in the preoperative phase (mPAPpre) and immediately after anesthesia induction (mPAPop) and the delta between these measurements were analyzed and compared with 28-day mortality after LT.

Sexe	
Male	65,94 %
Female	34,06 %

Age (yrs.)	
Min.	20
1st Qu.	49
Median	56
Mean	54,07
3rd Qu.	61
Max.	68

Cause	
Fibrosis	46,38 %
COPD	19,57 %
Alpha-1 Antitrypsine	13,04 %
Other	7,25 %
Brochiectasis	6,52 %
Emphysema	5,07 %
Retransplantation	1,45 %
Sclerodermie	0,72 %

Methods

From our local database, we extracted the records of pts who underwent LT between 2006-2013. The eligible population consisted of pts with mPAP available on their medical records in the pre and peroperative period. Two binary variables were tested for their significance (one-sided 2-sample test for equality of proportions with Yates' continuity correction at confidence level of 95%) with regard to 28-day mortality: 1) both mPAPpre and mPAPop values >25 mmHg and 2) mPAPop value >mPAPpre value, on the whole cohort and on the subgroup of pts receiving Nitric oxide (NO).

Results

Overall 138 LT pts (91 males (66%), age 54 years) were analyzed. The main causes for LT were: idiopathic fibrosis (46%), COPD (25%), alfa-1 antitrypsin deficiency emphysema (13%). 132 (95.7%) pts received NO. At Day28 post-LT, 123 (89%) patients were alive. 59 pts (44%) had both mPAPpre and op values ≥25 mmHg (group 1), 75 pts (56%) had at least one value < 25 mmHg (group 2). 22 pts (16%) had no PAP value >25. No difference in terms of 28-day mortality rate was observed between these two groups: 11.9% vs 9.3% in Group 1 and 2, respectively (p-value = 0.42). 93 pts (69%) had a mPAPop value > mPAPpre value, while for 41 pts (31%) the mPAPop value < mPAPpre value. No difference in terms of 28-day mortality rate was observed between these two subpopulations: 11% vs 10%, respectively (p = 0.5). Among the 132 pts who received NO, 89 pts (69%) had a mPAPop value > mPAPpre value, while for 40 pts (31%) the mPAPop value < mPAPpre value. No difference in terms of 28-day mortality rate was observed between these two subpopulations: 11% vs 10%, respectively (p-value = 0.5).

	Nb of patients	% of patients	Day28 post-LT Mortality
All Patients	138	100,00 %	10,87 %
Patients with both mPAPop and mPAPpre ≥ 25mmHg	59	42,75 %	11,86 %
Patients with at least one mPAP value < 25mmHg	79	57,25 %	9,33 %
- patients with mPAPpre ≥ 25mmHg	10	7,25 %	N/A
- patients with mPAPop ≥ 25mmHg	46	33,33 %	N/A
- patients with neither value ≥ 25mmHg	22	15,94 %	N/A
Patients with mPAPop > mPAPpre	93	67,39 %	9,76 %
Patients with mPAPop < mPAPpre	41	29,71 %	10,75 %

Conclusion

We did not evidence any link between mPAP and 28-day mortality rate whatever considering the peroperative value or the delta between the preoperative and operative period in LT pts.