# 32nd ESTS MEETING

26 - 28 MAY 2024 • BARCELONA, SPAIN

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EUROPEAN CONFERENCE
ON GENERAL THORACIC SURGERY

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**O-026**

## THE ROLE OF CENTRAL PULMONARY VENOUS GAS MEASUREMENT IN EXTENDING DONOR LUNGS CRITERIA FOR TRANSPLANTATION: A MULTICENTER ANALYSIS OF THE EUROPEAN SOCIETY OF THORACIC SURGEONS (ESTS) LUNG TRANSPLANT WORKING GROUP

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### OBJECTIVES

Peripheral arterial PaO2/FiO2 ratio (p-P/F ratio) over 300 mmHg remains as the classical cut-point in the acceptance of lung donors for transplantation. In the era of ex-vivo reconditioning, this parameter should be re-assessed. We aimed at analyzing the early outcomes of lung transplantation from donors with p-P/F ratio under 300 mmHg but with central pulmonary venous P/F ratio (c-P/F ratio) above 300 mmHg, to estimate to what extent the donor pool could be increased.

### METHODS

Prospective multicenter analysis recruiting 124 consecutive lung donors over a 1-year period. Donors were categorized into two groups: optimal donors (p-P/F ratio >300 mmHg) and extended donors (p-P/F ratio <300 mmHg and c-P/F ratio >300 mmHg). Both groups were homogeneous and fulfilled the rest of standard donor criteria. Early post-transplant outcomes and survival were compared between groups.

### RESULTS

We assessed 106 double-lung and 18 single-lung donors (66M/58F), 51+/-14 [15-78] years old. There were 29 extended (23%) and 95 (77%) optimal donors. In the extended group, p-P/F ratio was 234+/-51 mm Hg and the c-P/F ratio 439+/-76 mmHg (P/F ratio gap: 205+/-82 mmHg) ($p<0.001$). In the control group, p-P/F ratio was 435+/-8 mm Hg and the c-P/F ratio 487+/-103 mmHg (P/F ratio gap: 51+/-80 mmHg) (p=ns).

Lung transplants from the extended donor group did not differ from those optimal donors in terms of early graft function and survival (table).

### CONCLUSIONS

1. Peripheral P/F ratio <300 mmHg should not be considered a major criterion to discard a potential lung donor. In these cases, the central venous gas analysis should be assessed. With this strategy, the donor pool for lung transplantation may be increased in up to 23%.

2. In bilateral lung donors, those with p-P/F ratio >215 mmHg should undergo intraoperative assessment and c-P/F ratio determination.

**Disclosure**: No significant relationships.
**Keywords:** Lung Transplantation, Donor Assessment, Outcomes.

| | **Optimal (n=95)** | **Extended (n=29)** | **p** |
|---|---|---|---|
| Donor gender (Male/Female) | 39/51 | 16/12 | 0.76 |
| Donor assessment | | | |
| Single lung | 9 (9) | 9 (31) | |
| Double-lung | 86 (91) | 20 (69) | 0.01 |
| Donor age (years) | 50±15 | 53±11 | 0.46 |
| Recipient age (years) | 53±11 | 56±9 | 0.33 |
| Diagnosis | | | |
| COPD | 28 (29) | 16 (55) | |
| Pulmonary Fibrosis | 39 (42) | 8 (28) | |
| Cystic Fibrosis | 10 (10) | 3 (10) | |
| Other | 18 (19) | 2 (7) | 0.16 |
| Ischemic time (min) | 428±154 | 394±134 | 0.29 |
| P/F ratio 24h post-transplant (mm Hg) | 324±115 | 338±173 | 0.62 |
| P/F ratio 72h post-transplant (mm Hg) | 309±101 | 333±73 | 0.25 |
| Post-transplant ventilation (days) | 10±16 | 6±10 | 0.30 |
| PGD (72h) | 19 (20) | 7 (24) | |
| Grade 1 | 10 (10) | 1 (3) | |
| Grade 2 | 4 (4) | 4 (14) | |
| Grade 3 | 5 (5) | 2 (7) | 0.38 |
| Deaths | 14 (15) | 4 (14) | 0.62 |