Lung transplantation after ex vivo lung perfusion: a monocentric midterm follow-up

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Background
Ex Vivo Lung Perfusion (EVLP) is a valuable tool for the reassessment of marginal lungs before transplantation and can increase the pool of available organs. Moreover, in a setting of donation after circulatory death (DCD), lung evaluation by EVLP is advisable, before proceeding to transplant. The aim of this study was to investigate the characteristics of the recipients of EVLP assessed grafts and their outcomes.

Methods
A retrospective study was conducted including all lung transplant (LuTx) recipients from January 2011 to June 2017 in our centre. Two groups of patients were identified based on their graft: EVLP assessed (Group A) or not (Group B). All data were statistically analysed with SPSS Version 22 for Macintosh.

Results
In the study period, a total of 146 LuTx were performed; of those, 20 grafts underwent EVLP reconditioning, 18 from donation after brain death (DBD), 2 from DCD. There weren't statistical differences in the two groups regarding demographic data, LAS score, type of transplant, pre- and intra-operative extracorporeal membrane oxygenation (ECMO). EVLP grafts had early perioperative results, incidence of PGD3, mortality rate and other medium and long-term outcomes comparable to group B transplantations; in particular, no difference was found between the two groups in terms of survival.

Conclusion
EVLP reconditioning can increase the number of available grafts, with similar outcomes and survivals, compared to conventional grafts. The experience gained on DBD promoted the procedure even in DCD after a "no-touch" time of 20 minutes, necessary for legal declaration of death in Italy.