EARLY EXPERIENCE WITH THE ORGAN CARE SYSTEM FOR DONOR LUNG
PRESERVATION IN LUNG TRANSPANTATION

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Objectives: Static cold storage is the standard method of preservation for donor lungs even if cold ischaemia does not prevent organ injury. The Organ Care System (OCS) is a portable ex-vivo ventilation and perfusion system designed for normothermic perfusion of standard donor lungs, which combines organ transport, preservation and continuous evaluation. We reviewed our experience with the OCS device focusing on donor lung preservation and early recipient outcome.

Methods: Between December 2011 and April 2014, 11 patients (mean age 38 years, range 22-60 years) underwent bilateral lung transplantation using standard donor lungs (5 males/6 females, mean age 36 years, range 13-49 years, mean Eurotransplant score 6) preserved with OCS system. Donor lung and recipient characteristics were analysed, including OCS monitoring, post-operative primary graft dysfunction (PGD) score, graft and patient outcome.

Results: Mean OCS running time 306 ± 101 min. Donor lungs PaO2/FiO2 ratio before harvesting and after perfusion with OCS were 450 ± 88 and 507 ± 69 mmHg, respectively. Total cold ischaemia was 177 ± 38.6 min for the first lung and 277 ± 53.2 min for the second lung. Mean MV and ICU time were 1 ± 0.9 days and 12 ± 10 days, respectively. Mean PGD score at 0, 24 and 72 h was 0 while graft and recipient survival at 30 days was 100%.

Conclusion: In our experience, lung preservation with OCS lung is a safe and valid procedure for organ transport and evaluation, strongly reducing cold ischaemia. In addition, OCS normothermic perfusion has shown good results in terms of PGD prevention and early recipient outcome.