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LUNG TRANSPLANTATION WITH GRAFTS FROM DONATION AFTER CIRCULATORY DEATH DONORS AND PROLONGED ISCHEMIA TIMES: SINGLE CENTRE EXPERIENCE

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Background

Donor's shortage is one of the main factors limiting lung transplantation (LT), and lung procurement from donation after circulatory death (DCD) donors could represent a valuable resource. We present our centre's experience with grafts procured from DCD donors, and compare the outcomes with those of recipients receiving lungs from donation after brain death (DBD) donors. Our previously described non-rapid normothermic open-lung technique, consisting of recruitment manoeuvres, protective ventilation, and CPAP without topical cooling, was employed for procurement.

Methods

We evaluated patients undergoing bilateral LT at our centre from November 2014 to July 2019; exclusion criteria were as follows: recipients ≤14 years, re-LT, donors ≥65 years, DCD category I and IV. We prospectively recorded variables of interest; respiratory functional parameters throughout the first year after LT were also registered. We compared the outcomes of patients in the DCD Group and DBD Group.

Results

During the study period, we performed 143 LT; 22 cases were excluded, the other 121 were enrolled: 11 recipients with lungs from DCD donors (5 DCD Maastricht category II, 6 category III). Clinical features were homogeneous in the two groups. Cystic fibrosis was the most common indication (72.7% and 61.9% in the DCD and DBD Group respectively). DCD donors had a higher BMI (p= 0.022). Machine perfusion was employed in 15.5% of DBD grafts for evaluation. Cold ischemia and preservation time were significantly longer in the DCD Group (p< 0.001). Patients in the DCD Group required more days of post-LT mechanical ventilation (DCD Group=2 days; DBD Group=1 day, p= 0.011); grade 3 primary graft dysfunction occurred in 27.3% cases in the DCD Group and 18.2% in the DBD Group (0= 0.742). Airway complications were more frequent in the DCD Group (18.2% vs 6.4% in the DBD Group). No patients in the DCD Group experienced chronic rejection or died during the study period. With regard to pulmonary function, mean FEV1 was significantly higher in the DBD Group 6 months (83.5% vs 78.5%), but not 1 year (86.0% vs 81.7%) after LT.

Conclusions

Despite the small population, the results of our experience are encouraging, showing the feasibility of LT with grafts from DCD donors despite prolonged ischemia times, with adequate grafts function and survival.

Disclosure of interest: None declared