954 Improving kidney retrieval from cDCD using normothermic extracorporeal membrane oxygenation

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Introduction & Objectives: During the past decade, kidneys obtained after controlled circulatory death (cDCD) have significantlyincreased, in order to increase the number of donors. It achieved 24% of total Kidneys transplant during the last year in Spain. However, it implies warm ischemia times, resulting ina greater risk for organs. Focusing on graft quality optimization, abdominal Normothermic Extracorporeal Membrane Oxygenation (NECMO) has been implemented in order to restore blood flow before organ recovery. NECMO perfusion provides promising results for the use of liver grafts for cDCD. The aim of this study is to evaluate cDCD kidneys, obtained from NECMO technique compared with cDCD ultra-rapid retrieval.

Materials & Methods: We have performed a retrospective paired cohort study of Maastricht category III DCD kidneys transplanted in one single center, Hospital Universitari de Bellvitge, Barcelona. The group was paired by donor age, recipient age, and cold ischemia time. We compared kidneys of both cDCD ultra-rapid retrieval and NECMO retrieval groups.

Results: From 2013 to 2018,39 kidneys transplants have been obtained from Maastricht category III cDCD donor retrieval with NECMO procedure. We compared 2 groups: NECMO versusultra-rapid retrieval (data is presented in table 1).

	Total(78)	NECMO(39)	Ultra-rapid(39)	p
Donor age(years)	58(IC95%:55-61)	57(IC95%:53-61)	58(IC95%:55-62)	0.599
Diabetes MellitusDonor(%)	15%(12)	18%(7)	13%(5)	0.530
Hypertensive Donor(%)	37%(25)	23%(9)	51%(20)	0.010*
Serum creatinine preretrieval(µmol/L)	67(IC95%:60-74)	71(IC95%: 62-79)	63(IC95%:51-74)	0.2460
CIT(Cold ischemia time, min)	657(IC95%: 566-749)	640(IC95%: 509-771)	674(IC95%:541-807)	0.718
WIT(warm ischemia time, min)	18(IC95%:16-20)	15(IC95%:13-17)	21(IC95%:18-24)	0.0009*
HMP(Hypothermic machine perfusion,%)	32%(25)	28%(11)	36%(14)	0.467

DGF(Delayed Graft Function, need of dialysis first week,%)	40%(31)	18%(7)	62%(24)	0.000*
DGF duration(days)	11(IC95%:7-16)	16(IC95%:-6-37)	10(IC95%:6-15)	0.3659
Hospitalization(days)	12(IC95%:10-15)	11(IC95%:8-14)	14(IC95%:9-18)	0.3230
Serum creatinine Discharge day(µmol/L)	220(IC95%:191-248)	178(IC95%:145-211)	263(IC95%:218-307)	0.0023 *
Serum creatinine 1 year(µmol/L)	146(CI95%:133-159)	138(CI95%:120-156)	153(CI95%:134–173)	0.2352

From multivariable analysis, NECMO, HTA donor, DM donor, WIT and serum Creatinine pre retrieval show that NECMO is a protective factor OR=0.045 (CI 95%: 0.008-0.245, p=0.000), and Diabetic Donor is an important risk factor OR=15.4 (CI 95%: 2.28-103.9, p=0.005) for DGF. There is no difference in kidney survival (Mantel-Cox test p=0.3324).

Conclusions: Although the Ultra-rapid retrieval is highly extended with satisfactory results, in our series kidney retrieval with NECMO technique shows less DGF, corroborating that it could be a good way to reverse warm ischemia effects, and prevent DGF.