introduced in our legislation in 1979 (see more recently RD 1070/1999). However, it is debatable whether that generic consent to donate unless stated otherwise covers the consent to undergo the array of ante-mortem measures that precedes actual donation (basically preservation procedures). It is also doubtful that the protocol stated in the Real Decreto 1070/1999 is well-tuned to guarantee that the advanced directives of patients who suffer cardiac arrest outside the hospital are fully taken into account. On the other hand, to the extent that the ante-mortem measures are not administered for the benefit of the patient, it has been claimed that UDCCD is done in violation of Act 41/2002 as well as the Convention of Human Rights and Biomedicine (the so called Oviedo Convention). CONCLUSIONS Our legal institutions, in Spain and elsewhere, currently foresee the possibility of undergoing medical procedures for the benefit of third parties (living organ donation is precisely the most poignant example), but it is much more doubtful that our praised opting-out scheme provides sufficient legal ground to UCDD as it is currently developed in Spain.

HEART & LUNG

OP#09 IMPACT OF AN ACELLULAR HEMOGLOBIN-BASED OXYGEN CARRIER ON MYOCARDIAL FUNCTION AND ENERGY METABOLISM DURING EX VIVO HEART PRESERVATION

Presented by Christopher White, Winnipeg, Canada
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Objective: Ex vivo heart preservation has been proposed as a means to resuscitate donor hearts following cardiocirculatory death; however, the optimal method of oxygen delivery has not been established. Donor blood-based solutions contain immune cells that may propagate myocardial injury. We sought to determine if an acellular hemoglobin-based oxygen carrier (Hemopure, OPK Biotech, USA) could provide equivalent preservation of myocardial function and energy metabolism. Methods: Twelve pig hearts were procured following cardioplegic arrest and perfused ex vivo at 37C. Group 1 hearts (G1, N=6) were perfused with a donor blood-STEEN solution ([Hb]=40g/L) and Group 2 hearts (G2, N=6) were perfused with a Hemopure-STEEN solution ([Hb]=40g/L). Hearts were transitioned into working mode for assessments at 1 (T1), 3 (T3), and 5 (T5) hours of ex vivo perfusion. Myocardial function and energy metabolism were assessed by pressure-volume loop analysis and 31P magnetic resonance spectroscopy, respectively. Results: G2 hearts demonstrated superior myocardial energy metabolism at T1 (inorganic phosphate/phosphocreatine: G2=0.29±0.04 vs. G1=0.49±0.03, $p<0.01$), although this was not observed at T3 (inorganic phosphate/phosphocreatine: G2=0.37±0.03 vs. G1=0.44±0.02, $p=0.12$) or T5 (inorganic phosphate/phosphocreatine: G2=0.44±0.05 vs. G1=0.49±0.03, $p=0.31$). Diastolic function was comparable between groups at T1 (Tau: G2=62±6 vs. G1=56±5, $p=0.50$); however, it was impaired in G2 hearts at T3 (Tau: G2=113±13 vs. G1=68±2, $p<0.01$) and T5 (Tau: G2=138±24 vs. G1=76±6, $p=0.05$). The development of myocardial edema in G2 hearts over the preservation interval (weight gain: G2=17±2 vs. G1=7±1 grams/hr, $p<0.01$) may account for these observations. Conclusions: Ex vivo perfusion with Hemopure may provide superior preservation of myocardial energy metabolism; however, methods to minimize myocardial edema are required to facilitate use as a donor blood alternative.

OP#10 WHAT IS THE POTENTIAL INCREASE IN THE HEART GRAFT POOL BY CARDIAC DONATION AFTER CIRCULATORY DEATH?

Presented by Timothée Noterdaeme, Liege, Belgium(Munich,Germany)
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Background: Heart transplantation remains the only definite treatment option for end-stage heart diseases. The use of hearts procured after donation after circulatory death (DCD) could help decrease the heart graft shortage. The aim of this study was to evaluate the potential increase of heart graft pool by developing DCD heart transplantation. Methods: We retrospectively reviewed our local donor database from 2006- October 2012, and screened the complete controlled DCD donor population for potential heart donors, using the same criteria as for donation after brain death (DBD) heart transplantation. Acceptable donation warm ischemic time (DWIT) was limited to 30 min. Results: 206 DBD and 85 DCD were performed. From the 206 DBD, a total of 77 (37.4%) hearts were procured and transplanted. Out of the 85 DCD, 10 (11.7%) donors fulfilled the criteria for heart procurement with a DWIT of under 30 minutes. Within the same period, 90 patients were newly listed for heart transplantation, of which 59 were transplanted, 22 died or were unlisted, and 9 were waiting. Conclusions: It could be estimated that 10.5% of the DCD might be heart donors, representing a 16% increase in heart transplant activity, as well as potential reduction of the deaths on the waiting list by 45%.