Liver transplant from controlled donation after circulatory death donors with normothermic regional perfusion versus donation after drain death donors

Eric Savier, Chetana Lim, Olivier Scatton

Liver transplantation from controlled donation after circulatory death donors with normothermic regional parfusion vs. donation after drain death donors

Eric SAVIER [1,2] MD; Chetana LIM [1] MD,PhD; Olivier SCATTON [1,2] MD,PhD

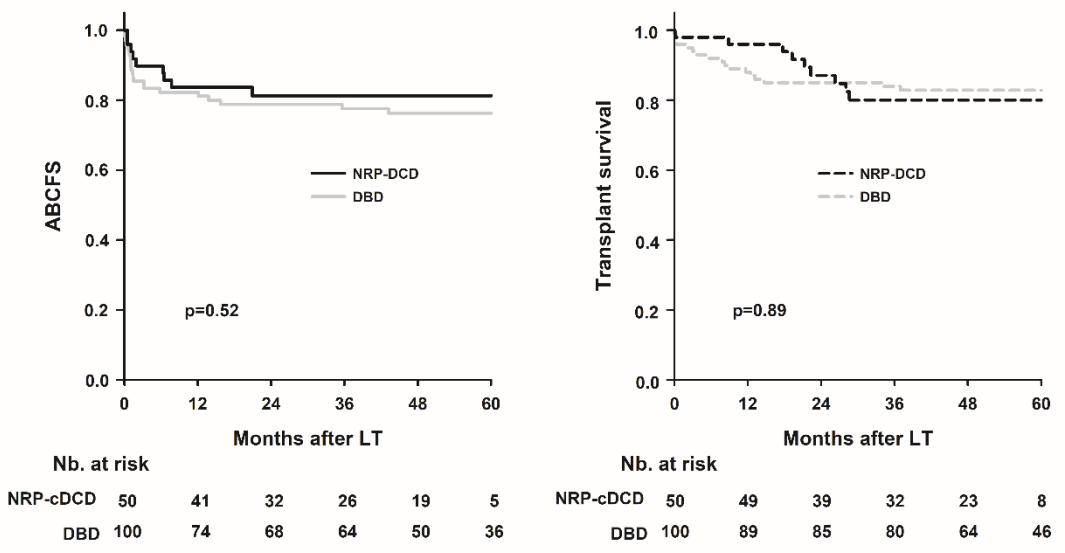
1: Service de chirurgie digestive et hépato-bilio-pancréatique, transplantation hépatique, CHU Pitié-Salpêtriere, Assistance Publique-Hôpitaux de Paris (AP-HP), Sorbonne Université, Paris, France

2: Centre de Recherche Saint-Antoine (CRSA), UMRS-938, Institute of Cardiometabolism and Nutrition (ICAN), Sorbonne Université, INSERM, Paris, France

We read with great interest the recent article of Ruiz et al.(1) and would like to congratulate the authors. Also, we would like to make some important comments. Ruiz et al. reported the outcomes of liver transplantation (LT) from controlled donation after circulatory death (cDCD) donors with normothermic regional perfusion (NRP) (from 2015 to 2019, 100 patient) versus donation after brain death (DBD) donors (from 2015 to 2019, 200 patients). Using the same design (case match study with a 1:2 ratio) and endpoints (graft survival and death noncensored graft survival, patient survival, biliary complications, early allograft dysfunction and acute kidney injury) we published same results in Transplantation last year(2). Unfortunately, our study was not cited in the Spanish one. Although the NRP techniques (premortem cannulation in this study vs. postmortem cannulation in ours) and the minimum follow-up period (6 months in the Spanish vs. 24 months in the French Study) were different, this study confirms the French results: altogether, these two studies demonstrate the benefits of NRP when applied in the context of cDCD donations.

We observed an interesting point in both studies about the transplant survival (event = retransplantation or death of the patient) which was superior of the NRP-cDCD group compared to the DBD group during the first years of the follow up (significant in the Spanish study only). Both studies were retrospective with inherent source of bias. Therefore, to progress in the analysis, we tested another endpoint: the arterial or biliary complication-free survival (ABCFS) (3) and found no difference (Figure 1). Instead of increasing the number of LT, ABCFS improves the power of the statistical test by taking account of retransplantation or death of the patient or ABC (arterial or biliary complication of Dindo/Calvien ≥III). ABC event, which included ischemic cholangiopathy, is a particular interest in LT from cDCD. It could be interesting to test ABCFS in the Spanish study or in both cohorts. The next step will be to test, with the same methodology, the association of a hypothermic perfusion (HPM) to the NRP (NRP-cDCD-HPM).

Figure 1



Following LT with NRP-cDCD (*n* = 50) versus DBD donor (*n* = 100), 1-year ABCFS (event = ABC or retransplantation or death) was 84% and 82% respectively and 1-year transplant survival rate (event = retransplantation or death) was 96% and 88% respectively.

REFERENCES

Reference List

1. Ruiz P, Valdivieso A, Palomares I, Prieto M, Ventoso A, Salvador P et al. Similar Results in Liver Transplantation From Controlled Donation After Circulatory Death Donors With Normothermic Regional Perfusion and Donation After Brain Death Donors: A Case-Matched Single-Center Study. Liver Transpl 2021.

2. Savier E, Lim C, Rayar M, Orlando F, Boudjema K, Mohkam K et al. Favorable Outcomes of Liver Transplantation from Controlled Circulatory Death Donors Using Normothermic Regional Perfusion Compared to Brain Death Donors. Transplantation 2020;104:1943-1951.

3. Savier E, De Rycke Y, Lim C, Goumard C, Rousseau G, Perdigao F et al. Novel Composite Endpoint for Assessing Outcomes in Liver Transplantation: Arterial and Biliary Complication-Free Survival. Liver Transpl 2021.