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Is History of Coronary Artery Bypass Graft Surgery a Strong Determinant of Inferiority of Organ in Cadaveric Liver Donation? Emerging Role of personalized Medicine

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Abstract
Nowadays, there has been a considerable advance of personalized medicine on a scientific basis and clinical demands in cardiovascular diseases. This study investigated a history of coronary artery bypass graft surgery a strong determinant of inferiority of organ in cadaveric liver donation. In this study, fate of 14 potential deceased liver donors with a history of coronary artery bypass graft surgery has been investigated. This report shows that careful gross and microscopic investigation of the liver is the key to extract suitable life savior livers from donors with advanced age.

INTRODUCTION

Personalized medicine is a new medical model with whole determinations and practices being appropriate to individual patients in whatever ways feasible [1]. Significant advances in cadaveric organs utilization have provided a sturdy foothold for establishment of organ donation programs from extended criteria donors (ECD). However, these donors are still being neglected in many developing countries [2]. Although the livers procured from ECDs may be problematic somehow, the high rate of death in waiting list has made specialists to come up with the hard decisions of accepting the risks [3].

It is shown that marginal livers perform inferior defense to ischemia/reperfusion injury, which is responsible for graft dysfunction in ECD organs. On the other hand, liver steatosis makes the organ more prone to ischemia/reperfusion injury [4].

Outcome of fatty livers after transplantation has been shown to be under influence of severity of steatosis and donor age according to scoring systems [5]. In addition to liver cells degeneration, harmful impact of global atherosclerosis on arteries and complications of calcified plaques during surgery should be under focus [6].

In contrast, despite broader utilization of ECD livers, discard rate of donors in our OPU after liver biopsy has been decreased due to gaining from systematic and scheduled donor management strategies [7].

This study investigated a history of coronary artery bypass graft surgery a strong determinant of inferiority of organ in cadaveric liver donation.

Presenting Concern

Donors with history of coronary artery bypass graft surgery (CABG) are comprehensive reflection of summative cardiovascular comorbidities. In this study, fate of 14 potential deceased liver donors with a history of CABG have been investigated.

Clinical Findings

After exclusion of cases with missing data, 14 brain-dead cases with history of CABG surgery due to ischemic heart disease were identified through the last 10 years of organ donation practice. Records of both organ procurement unit and two liver transplantation centers were searched to extract donors' data and also recipients' status. Table 1 points out donors' findings of paraclinical investigations before organ retrieval.

Table 1: Donors' Findings of Para-clinical Investigations before Organ Retrieval and Transplant Result

3. Male (61)	NL	51	0.2	2.8	1.44	No	Hbcore Ab.PCR:Neg	No
4. Male (55)	FL.Grade 1	118	1.6	2.3	1.7	Yes	Neg	Yes
5. Female (53)	FL. Grade1	71	1.1	3.0	1.9	No	Neg	No
6. Male (62)	NL	109	1.0	2.9	2	Yes	Neg	No
7. Male (55)	FL.Grade 2	207	1.9	2.5	1.2	Yes	Hbcore Ab.PCR:Neg	Yes
8. Male (56)	FL. Grade1	91	1.5	2.8	1.4	No	Neg	No
9. Female (51)	FL. Grade 1-2	80	1.2	3.4	2.4	Yes	Hbcore Ab.PCR:Neg	No
10. Female (54)	NL	176	2.8	2.3	2.7	Yes	Neg	Yes
11. Male (54)	NL	66	2	2.9	3.1	No	Neg	No
12.Male (70)	FL. Grade 1-2	21	0.3	3.5	1.7	No	Neg	No
13.Female (65)	FL.Grade 2	12	o.4	3.0	1.5	No	Hbcore Ab.PCR:Neg	No
14. Male (63)	FL.Grade 2	48	1.2	2.9	2.2	No	Neg	No

FL: Fatty Liver, NL: Normal, PCR: Polymerase Chain Reaction

Outcome

Among 14 cases, 9 livers were diagnosed suitable for liver donation. 1 potential donor was lost before organ retrieval, 4 livers were disapproved by the surgeon responsible for organ harvest due to abnormal liver appearance or biopsy findings. Mean cold ischemia time was 8.18 ± 3.2 hours. 1 out of 9 recipients died at one week after transplantation due to sepsis. Mean fallow up period was 30.5 months.

CONCLUSIONS

CABG surgery should not be generally a contraindication of deceased liver donation due to noticeable post-transplant outcomes. Therefore, careful gross and microscopic investigation of the liver is the key to extract suitable life savior livers from donors with advanced age based on personalized medicine.

Conflict of Interest

None.

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