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Impact of donor-recipient genetic relationship on outcome of living donor liver transplantation

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Introduction: Living donor liver transplantation (LDLT) is a valuable option for expanding donor pool, especially in localities where deceased organ harvesting is not allowed. In addition, rejection rates were found to be lower in LDLT, which is attributed to the fact that LDLT is usually performed between relatives. However, the impact of genetic relation on the outcome of LDLT hasn't been studied. In this study, we examined the difference in rejection rates between LDLT from genetically related (GR) donors and genetically unrelated (GUR) donors.

Patients & Methods: All cases that underwent LDLT during the period from May 2004 till May 2014 were included in the study. The study group was divided into 2 groups; LDLT from GR donors and LDLT from GUR donors.

Results: 308 patients were included in the study; 214 from GR donors and 94 from GUR donors. HLA typing wasn't included in the workup for matching donors and recipients. GUR donors were wives (36; 11.7%), sons-in-law (7; 2.3%), brothers-in-law (12; 3.9%), sisters-in-law (1; 0.3%) and unrelated (38; 12.3%). The incidence of acute rejection in GR group was 17.4%, and in GUR group was 26.3% (p-value=0.07). However, there was a significant difference in the incidence of chronic rejection between the 2 groups; 7% in GR group and 14.7% in GUR group (p-value=0.03). In terms of overall survival, there was no significant difference between both groups.

Conclusion: LDLT from GUR donors is not associated with higher incidence of ACR. However, CR was significantly lower when grafts are procured from GR donors. HLA matching may be recommended before LDLT from GUR donors.

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Functional integrity of hepatocyte cell line derived from liver injury modelLokendra Chand¹ and Yeon Jun Jeong^{1,2}¹Chonbuk National University Medical School, South Korea²Chonbuk National University Hospital, South Korea

Background: Hepatocytes are widely used in research and clinical applications. However, short life span and limited capacity of replication of primary hepatocyte in vitro has been a problem for researchers. Furthermore, during cell culture, primary hepatocytes are transformed and lose their functional integrity hence limits use in research applications. To date, many researches have been conducted to establish hepatocyte cell lines for maintaining hepatocyte specific function for a longer period of time. In this study, a novel approach of establishing and characterizing hepatocyte cell lines was attempted.

Methods: FVB male mice were randomly divided into 3 groups. For the priming of the hepatocytes toxicity-inducing agents 3-5-diethoxycarbonyl-1 4-dihydrocollidine (DDC) diet was given to group 1 mice for 3 weeks, 3% Thioacetamide 2 mL/100 mL of water was given to group 2 mice for 3 weeks and 20% CCl₄ 1mL/Kg intraperitoneally 3 times a week for 4 weeks was given to group 3 mice. Hepatocytes were obtained by two-step collagenase perfusion method.

Results: Cell line hence obtained was tested for various hepatocyte specific features. Hepatocytes obtained from DDC injury model was non-tumorogenic in nude mice inoculation and does not form colony in soft agar; furthermore, cell line hence obtained showed the hepatocyte specific protein and gene expression but the cell line obtained from Thioacetamine and CCl₄ induced cell line formed the tumor in nude mice inoculation.

Conclusion: The cell line obtained from DDC induced liver injury maintains the functional integrity of hepatocytes that may aid research of drugs, toxicology, carcinogens and hepatocyte transplantation.

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