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Liver Graft MicroRNAs Expression In Different Etiology Of Acute Jaundice After Living Donor Liver Transplantation

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Background : Acute jaundice remains a critical problem following liver transplantation. MicroRNAs (miRNAs) are involved in regulating gene expression related to various disease phenotype and statuses. To differentiate acute jaundice etiology after living donor liver transplantation (LDLT), we examined the hepatic miRNA expression patterns in several liver graft pathologies.

Methods : Eighty liver transplant recipients undergoing post-LDLT graft biopsy for the evaluation of acute jaundice were enrolled in this 1-year prospective study. Using a real-time quantitative reverse transcription-polymerase chain reaction profiling assay, we identified hepatic miRNA (miRNA-122, miRNA-301, miRNA-133a, and miRNA-21) signatures in various allografts pathologies.

Results : Pathologic findings of the 80 recipients were as follows: acute cholangitis (AC), 37 (46%); acute rejection (AR), 20 (25%); recurrent hepatitis (RH), 12 (15%); non-specific pathological change, 6 (8%); and fatty change (FC), 5 (6%). None of these identified hepatic miRNAs expression pattern was significantly correlated with serum parameters, including neutrophil-lymphocyte ratio. In AC, hepatic miRNA-122, miRNA-301, miRNA-133a, and miRNA-21 expression was significantly downregulated ($p < 0.05$). MicroRNA-122 expression was elevated in cases of AR and RH ($p < 0.05$); miRNA-301 and miRNA-21 expression was higher in RH than in AC ($p < 0.05$); and miRNA-133a expression was higher in FC than in AR ($p < 0.05$).

Conclusions : Our study suggests that specific hepatic miRNA expression patterns as a checklist may be useful for differential diagnosis of acute jaundice following liver transplantation.

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