Summary

End stage liver disease (ESLD) is a health problem worldwide. Liver transplantation is currently the only effective therapy.In Egypt, living donor liver transplantation has provided the only option for patient with ESLD.

In Egypt, the most common indication for liver transplantation is ESLD due to hepatitis C infection followed by selected hepatic malignancy (HCC)

Liver transplantation can be associated with numerous complications. Rejection and recurrent hepatitis C are considered the most common complications that affect liver transplantation.

Many prognostic factors affect the outcome of liver transplantation such as age of the donor, steatosis and presence of T cell subpobulation in both donor and recipient.

The present study is a retrospective study, including 38 needle liver biopsies, 19 biopsies before transplantation (from donors) and 19 after transplantation (from recipients) of which, 9 cases showed rejection and 10 cases showed recurrent hepatitis C.

The donor's biopsies were examined by hematoxylin and eosin for portal inflammation, steatosis and spotty necrosis.

The relationship between the histological criteria of the donors (steatosis, spotty necrosis and inflammatory activity) and the post transplant complications (ACR and recurrent hepatitis C) were studied.

The recipient biopsies were examined by H&E to confirm diagnosis and then RAI score according to Banff schema (1997) and grade of recurrent hepatitis according to modified Knodell and Ishak(1995) were compared.

Anti CD4 and anti CD8 immunohistochemical staining were applied to detect and count CD4+ &CD8+ lymphocytes in portal tracts and hepatic lobules in relation to all lymphocyte in both donors and recipients.

The ratio of CD4 & CD8 + cells /all lymphocytes were calculate and then the ratio of CD4 to CD8 was calculated and correlated to clinicopathological findings.

Conclusion

-Donors with grade 1 steatosis (<10%) can be involved in liver transplantation without more complications than non steatotic donors.

-The increase of the number of necro inflammatory foci of the donors lead to increase susceptibility to acute cellular rejection after transplantation.

-The presence of increased number of CD8 + cells than CD4+ cells in the donor increase the risk of acute cellular rejection after transplantation.

- In recipients acute cellular rejection cases, CD8+ > CD4+ and it is better to count CD4& CD8 in portal tracts than in hepatic lobules as it is more significant in both donors and recipients.

-In recipient of recurrent hepatitis, CD4+> CD8+ cells.

-The number of CD8 +cells increased according with increase of rejection activity index, whereas CD4+ cells tend to decrease .

-The number of CD4 + cells increased with increase the grade of recurrent hepatitis, whereas CD8+ cells tend to decrease

Recommendations

1-Using anti CD4 & anti CD8 in donor biopsy can be helpful to predict the occurrence of acute cellular rejection after transplantation

2-The ratio between CD4+ and CD8+ cells can be helpful in differentiate between acute cellular rejection and recurrent hepatitis after liver transplantation.

3-Further studies on more cases are recommended to detect cut off ratio of CD8:CD4 in donors to be safely accepted for donation.