INTRODUCTION

End stage liver disease (ESLD) is a health problem worldwide. Liver transplantation is currently the only effective therapy (**Lorenzini et al., 2008).**

Orthotropic liver transplantation (OLT) is the treatment of choice for chronic or acute end stage liver disease **(Brown, 2005**).

Donor characteristics that are considered to be potentially more detrimental for transplantation outcome have changed over time **(Feng et al., 2006)**. Age, steatosis, positive viral hepatitis serology, intensive care unit stay, and history of malignancy in donor have been the matter of substantial debate in recent years (**Arash et al., 2007)**.

Steatosis is increasing in the developed world population and is commonly seen in conjunction with obesity, alcohol use, increased age, and the presence of typeII diabetes mellitus **(Angulo, 2006).**

Steatotic livers have been reported to be more susceptible to cold ischemia injury **(Schemmer et al.,1999)** and moderate to severe macrovesicular steatosis has been observed as the leading cause of severe liver preservation injury (**Briceno et al.,2005).**

The incidence of acute cellular rejection (ACR) in living related liver transplantation (LRLT) is reportedly 36-63% wherease that of chronic rejection is 2-3 % **(Chen et al., 2003).**

In Egypt, the most common indication for liver transplantation is ESLD due to hepatitis C infection followed by hepatic malignancy (HCC) (**El-Gazzaz and El-Elemi, 2010).**

Chronic HCV is the main cause of liver cirrhosis and liver cancer in Egypt and, indeed, one of the top five leading causes of death **(Mohamed, 2004)**. Egypt has the highest prevalence of adult HCV infection in the world, averaging 15%-25% in rural communities **(El-Raziky et al., 2007)**.

In Egypt, HCV is the most common etiology of chronic liver disease (CLD), where prevalence of antibodies to HCV (anti-HCV) is 10-fold greater than in the United States and Europe with a large underlying reservoir of HCV liver disease. Those patients are potential candidates for liver transplantation; living donor liver transplantation (LDLT) has provided the only option for patients with end-stage liver disease (ESLD) **(Yosry et al, 2008).**

Hepatocellular carcinoma (HCC) is the fifth most common cancer worldwide and the third most common cause of cancer-related death **(Parkin et al., 2001).**

Liver cancer formed 11.75% of the malignancies of all digestive organs and 1.68% of total malignancy (**Mokhtar et al., 2007**).

Tumor resection and liver transplantation are the most effective approaches for selective patients with HCC. However, tumor recurrence following liver resection for HCC is common and a major cause of death from this disease **(Regimbeau et al., 2004).**

There are few data on the relation between the recurrence of HCC and lymphocytic infiltration following liver transplantation **(Unitt et al.,2005).**

Acute Cellular Rejection (ACR) is pathologically characterized by lymphocytic infiltrate of portal tracts,bile duct damage and endotheliitis in portal and central hepatic veins .It is important to analyze immune cells infiltrating allograft liver tissue where ACR actually occurs **(Nobuyuki et al.,2006).**