INTRODUCTION

Liver transplantation has had a profound impact on the care of the patients with end stage liver disease and is the most effective treatment for many patients with acute and chronic liver failure resulting from a variety of causes**.(Karen F et al 2005).**

Before transplantation, patient with advanced liver disease usually died within months to years. Patients now have the opportunity for extended survival with excellent quality of life after liver transplantation **(Fulcher AS et al 2002).**

Liver transplantation is the surgical replacement of a diseased liver by all or part of a donated liver. Generally the donated liver comes from a person who has suffered brain death or severe brain injury. **(Lawrence U et al 2005).**

Living donor liver transplantation is the partial removal of a healthy donor's liver for transplantation, has been developed as one solution to organ shortage. For the recipient the donated lobe provides significantly better liver function, for the donor the remaining liver portion regenerates to approximately pre-operative size and function within weeks to months. **(Blumgart LH, 2000).**

Although liver transplantation has a good survival rate, a number of potentially fatal complications can occur in patients who have undergone transplantation. These complications can be divided into four major categories: Rejection ,Postoperative surgical complications such as " Vascular and biliary complications ",Complications of immunosuppressive therapy and Recurrence of disease. **(Mark Dedmon 2007).**

One of the biggest fears of patients and health care providers alike is the fear for organ rejection. Although rejection can not always be

avoided, several practices will help to facilitate prevention and early recognition such as Ultrasonography and CT Scanning, which are performed to ensure vascular patency of the artery, portal vein, and caval anastomoses and to exclude stenoses. Additionally, a diagnosis of biliary dilation can be made. They are also used to check for fluid collections such as blood or bile (**Demetris AJ et al., 2005**).

Postoperative problems , such as bile leaks, surface bleeding and vascular complications, have been significant in liver transplantation, especially in earlier series. Even today, biliary complications still occur in 15-30 percent of living donor liver transplantation recipients. Vascular complications , such as arterial thrombosis and outflow obstruction, may lead to loss of valuable grafts. Long term biliary and vascular complications both cause significant morbidity and mortality. Interventional radiologists are an integral part of the multidisciplinary team necessary for optimizing the management of these complications. (**Cheng YF et al 2000**)

Imaging plays an important role in detecting postsurgical complications. US is excellent for screening for biliary, arterial, and venous problems. Contrast-enhanced dual-phase CT and non-enhanced CT can help detect or confirm these postoperative complications. CT is especially useful in depicting fluid collections and is used most commonly to guide percutaneous aspirations and abscess drainages.(**Russ, et al 2008)**

With the availability of advanced scanners, MRI, MRA, MRV, and MRCP increasingly are used to better define the postoperative biliary tree and to evaluate hepatic vascular anatomy and patency. Many complications can be temporized or corrected by using interventional radiologic techniques. Some can be treated by using ERCP. With a combination of these tools, many patients can be spared the morbidity and potential mortality of repeat operation or re-transplantation.(**Russ, et al 2008)**

Interventional radiology as a subspecialty of radiology arose following the introduction of diagnostic catheter angiography in the 1950s, as initially described by Seldinger. Technical advances in angiography led to so-called interventional applications. One of the earliest was the use of diagnostic catheters for the treatment of gastrointestinal hemorrhage by infusion of vasoconstrictive drugs. The development of the modern balloon dilatation catheter for transluminal angioplasty by Gruntzig et al in the mid-1970s was an important step in converting this predominantly diagnostic modality into a therapeutic one. More recent innovations include a variety of percutaneous drainage procedures and the use of vascular and biliary stents. (**Norman G. Diamond 2007)**

Antegrade or retrograde interventional approach was used to successfully treat all biliary complications, and all percutaneous drainage procedures were effective in the control of intra-abdominal fluid collections. Portal vein stenosis was treated by balloon dilatation, and the associated splenorenal shunt was closed by metallic coil embolization via transhepatic catheterization of the portal vein. Hepatic vein stenosis was effectively treated by balloon dilatation and expandable metallic stent deployment via transfemoral and jugular venous approaches, respectively. Hepatic vein thrombosis was only partially lysed by transvenous streptokinase administration, and surgical thrombectomy was needed to achieve complete recanalization.(**LEE SY et al 2007**)

We can conclude that interventional radiological procedures are very useful for managing biliary and vascular complications after liver transplantation. These techniques provide a cure in most situations, thus obviating the need for further surgical intervention or re-transplantation. (**Cheng YF et al 2000**)

AIM OF THE WORK

To evaluate the role of interventional radiological procedures in the management of postoperative complications of liver transplantation .