Study Of Outcome Difference In Patients With Decompensated Liver Cirrhosis In a general Versus a University Hospital

Thesis submitted for the partial fulfillment
of the M.Sc Degree in Internal Medicine

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"قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم"

صدق الله العظيم

"سورة البقرة – آية ٣٢"

قرآن كريم

To My Great Father And My

Precious Mother

To My Beloved Husband And

My

Little Family

And

To My Dear Brother And

Sister

Mohamed Abd Elaziz Elmadany

2013

LIST OF ABBREVIATIONS

AFP	Alpha fetoprotein
ALF	Acute liver failure
ALT	Alanine transaminase
ANA	Antinuclear antibody
ANP	Atrial natriuretic peptide
APACHE	Acute Physiology and Chronic Health Evaluation
ASA	American Society of Anesthesiologists
AST	Aspartate transaminase
AVP	Arginine vasopressin
BNP	Brain natriuretic peptide
CBC	Complete Blood Count
CCK	Cholecystokinin
CNP	C-type natriuretic peptide
CT	Computed tomography
CTP	Child-Turcotte-Pugh
CVS	Cardiovascular system
DNP	Dendroaspis natriuretic peptide
EBL	Endoscopic band ligation
ECF	Extracellular fluid
ECM	Extracellular matrix
FHF	Fulminant Hepatic Failure
GABA	γ-aminobutyric acid
GAVE	Gastric antral vascular ectasia
GIT	Gastrointestinal tract
GGT	Gamma-Glutamyltransferase
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HE	Hepatic encephalopathy

HPS	Hepatopulmonary Syndrome
HRS	Hepatorenal syndrome
HSCs	Hepatic stellate cells
HVPG	Hepatic vein pressure gradient
IL-10	Interleukin-10
INR	International normalized ratio
LT	Liver transplantation
MELD	Model for End-Stage liver disease
MRI	Magnatic resonance imaging
NAFLD	Nonalcoholic fatty liver disease
NASH	Nonalcoholic steatohepatitis
NO	Nitric oxide
NSAID	Non steroidal anti -inflammatory drugs
OLT	Orthotopic liver transplantation
PAP	Pulmonary artery pressure
PDGF	Platelet derived growth factor
PELD	Pediatric End-Stage Liver Disease
PHG	Portal hypertensive gastropathy
PMN	Polymorphonuclear cell
PVR	Pulmonary vascular resistance
RAAS	Renin-angiotensin-aldosterone system
SBP	Spontaneous bacterial peritonitis
SNS	Sympathetic nervous system
SOFA	Sequential Organ Failure score
TIBC	Total Iron Binding Capacity
TIPS	Transjugular intrahepatic portosystemic shunt
TGF-β	Transforming growth factor beta
TNF-α	Tumor necrosis factor alpha
UNOS	United Network for Organ Sharing

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INTRODUCTION

Liver cirrhosis is associated with increased morbidity and mortality . the prognosis of patients with pre-existing liver cirrhosis is especially poor in the case of acute decompensation which is mostly owing to bleeding complications and infections such as pneumonia and spontaneous bacterial peritonitis. ***(Grinesp et al ., 2008).***

An accurate dignosis of the patient helps appropriate selection of a treatment program. The scoring system of a model for end - stage liver disease (MELD) was originally developed and validated to assess the short -term prognosis of patients with cirrhosis undergoing the Tran jugular intrahepatic Porto systemic shunt procedure ***(Malinchoc et al ., 2008).***

The child - pugh classification is used for prognosis of chronic liver disease, mainly cirrhosis. ***(Child et al ., 2008).***

- Prognosis in Patient With decompensated liver cirrhosis differ according to modality of treatment and facility**.** ***(Mulin et al., 2008).***

AIM of the work

1- To study the outcome difference in patients with decompensated liver cirrhosis in El-Gamalia general hospital versus Ain-Shams University hospital

2- To identify patients who are at substantially increased risk of morbidity or mortality using Child and MELD scores.

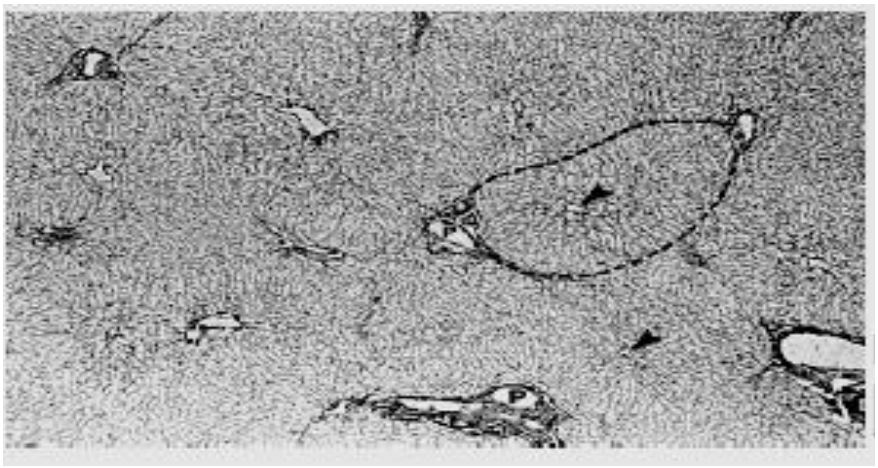
- ## LIVER ANATOMY AND FUNCTION

  - ### Liver anatomy:

The liver [hepar], hepar is Greek word, actually means "repairable" indicating that this organ can regenerate itself spontaneously in the case of lesion ***(Kmle, 2007).*** Normally, adult liver weighs between 1.7 - 3.0 kilo grams, and it's a soft, pinkish, brown "boomerange shaped" organ. It is located on the right upper quadrant of the abdomen and extending as a wedge to variable degree across the midline. The liver is the largest and most metabolically complex organ in humans ***(Cosgrove, 1985),*** Anatomically**,** it consists of two main lobes, right and left, separated by the round and falciform ligaments, plus two smaller lobes, the caudate lobe located on the posterior surface and the quadrate lobe on the inferior surface. The liver is anatomically divided into eight segments based on the distribution of the portal and hepatic veins. Each segment receives a pedicle of the portal vein and is an independent functional unit. The caudate lobe (segment 1) differs from other segments in that it receives blood from both the right and left branches of the portal vein and drains directly into the inferior vena cava.

At a microscopic level, the liver consists of myriads of individual functional units, traditionally called lobules. Each lobule is bounded by four to five portal triads (supplied from the portal vein and hepatic artery) and has a central terminal hepatic venule (central vein) ***(Hollinshead , 1985).***

A more physiologically sound concept is the unit termed the acinus. At the center is the portal triad, while the terminal hepatic venules are at the periphery. The acinus is divided into three zones based upon the distance from the feeding vessels (Figure 1) ***(Poul , 2012).***



(**Figure 1**) Normal liver. This liver biopsy shows the orderly arrangement of the liver cell plates, central veins (arrowheads) and portal tracts (P). A hepatic lobule is outlined. (Retic. stain, original magnification x 370).

The liver receives a dual blood supply**.** The portal vein drains the splanchnic circulation and provides 75% of the total blood flow (1,500 mL/min). The hepatic artery provides the remaining 25%. Small branches of each blood vessel (the terminal portal venule and the terminal hepatic arteriole) enter the acinus at the portal triad (zone1). ***(Westudy , 1985),*** Blood then flows through sinusoids between plates of hepatocytes toward the terminal hepatic venule (zone 3), where blood from several adjacent acing merges. The sinusoidal lining is fenestrated; this porosity allows nutrients to gain access to the intervening space of Disse and from it to the hepatocyte. The terminal hepatic venules coalesce to form the hepatic vein, which carries all efferent blood to the inferior vena cava. A rich supply of lymphatic vessels also drains the liver ***(Westudy , 1985).***

The bile canaliculus is formed-by grooves on the contact surface of adjacent liver cells. Bile forms in these canaliculi and progressively flows into ductules, interlobular bile ducts and then larger hepatic ducts. Outside the porta hepatis, the hepatic duct joins the cystic duct from the gallbladder to form the common bile duct, which drains into the duodenum ***(Last , 1984).***