



Hepatic dysfunction in critically ill patients

Thesis

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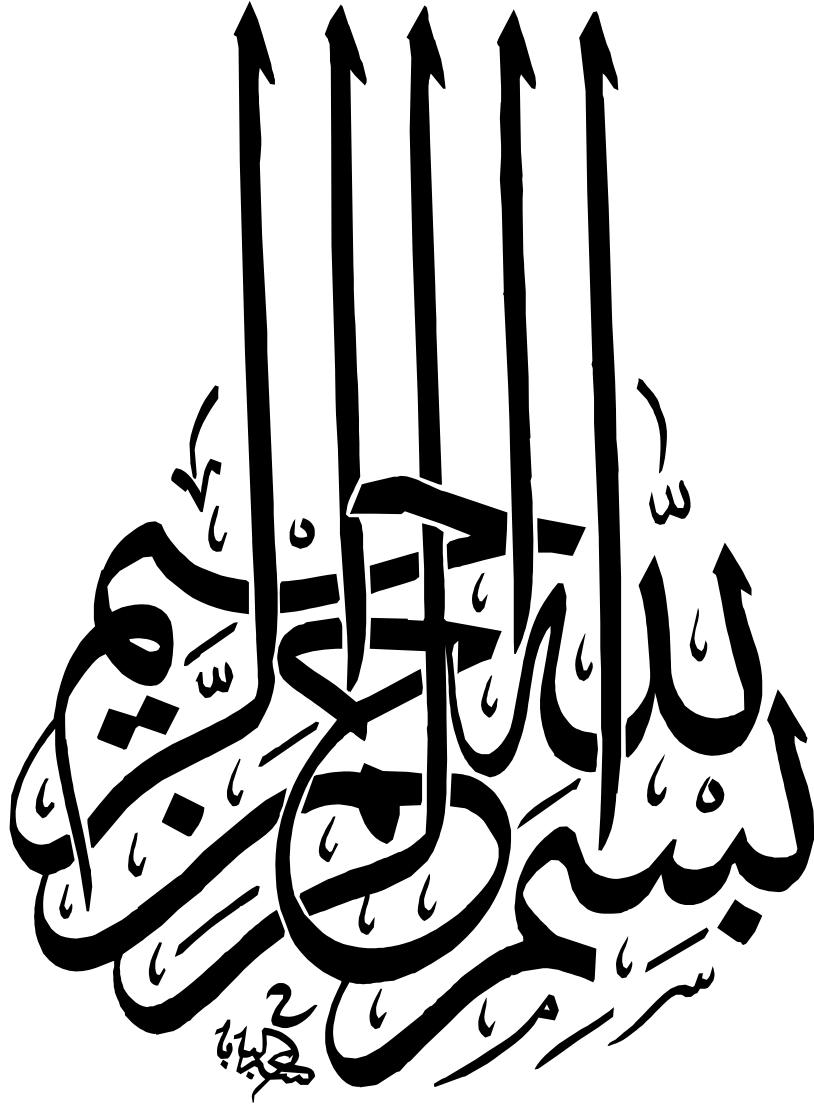
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Abstract

Hepatic dysfunction not only appears with chronic liver disease but in critically ill patients. It appears with some conditions like ischemic hepatitis, congestive hepatopathy, total parental nutrition, sepsis and drug hepatotoxicity. Liver function abnormalities present either as derangement of liver chemistry or overt clinical manifestations of liver disease. This problem (hepatic dysfunction) may be overlooked in the intensive care patient so; here we concentrate about the cause and predisposing factors of hepatic dysfunction in critically ill patient.

Key words:

Hepatic dysfunction in critically ill patients

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List of Abbreviations

• ACCP	American College of Chest Physicians
• ALP	alkaline phosphatase
• ALT	Alanine aminotransferase
• APPs	acute phase proteins
• ARDS	acute respiratory distress syndrome
• AST	aspartate aminotransferase
• ATS	American Thoracic Society
• BMI	body mass index
• BSEP	bile salt export pump
• CCU	cardiac care unit
• D	diaphragm,
• DILI	drug induced liver injury
• EEG	electroencephalographic
• ESICM	European Society of Intensive Care Medicine
• FFAs	free fatty acids
• FL	falciform ligament
• FLV	fissure for ligamentum venosum,
• GB	gall bladder,
• G-CSF	granulocyte colony stimulating factor
• GGT	gamma glutamyl transpeptidase
• GMCSF	granulocyte macrophage colony-stimulating factor
• Hb	hemoglobin
• HLI	Hypoxic liver injury
• ICAM-1	intercellular adhesion molecule-1
• IL	interleukin
• INR	international normalized ratio
• IV	intravenous
• IVC	inferior vena cava,
• Kcal	kilocalories
• LDH	lactate dehydrogenase
• LL	left lobe
• LPS	Lipopoly saccharide

• MCP-1	monocyte chemoattractant protein
• MDR	multi-drug resistance
• ml	milliliter
• mRNA	messenger ribonucleic acid
• MRP2	multi-drug resistance protein 2
• NAC	N-acetyl-l-cysteine
• NF- κ B	nuclear factor kappa B
• NOS2	nitric oxide synthase
• NTCP	Na ⁺ taurocholate co-transporting protein
• OATPs	organic anion transporting polypeptides
• OATs	organic anion transporter
• OCTs	organic cation transporters
• Pc	prothrombin concentration
• PCWP	pulmonary capillary wedge pressure
• Plt	platelets
• PNALD	parenteral nutrition associated liver disease
• Pt	prothrombin time
• RAR	retinoic acid receptor
• RL	right lobe
• RL	round ligament
• RNA	ribonucleic acid
• SCCM	Society of Critical Care Medicine
• SIRS	systemic inflammatory response syndrome
• SIS	Surgical Infection Society
• Tlc	total leucocytic count
• TNF- α	tumor necrosis factor- α
• TPN	total parenteral nutrition
• ULN	upper limit normal
• US	ultrasound
• VLDL	very low density lipoproteins
• WBC	white blood cells

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INTRODUCTION & AIM OF THE WORK



INTRODUCTION:

Hepatic dysfunction not only appears with chronic liver disease but in critically ill patients. It appears with some conditions like ischemic hepatitis(**Fuchs et al 1998**), congestive hepatopathy, total parental nutrition (**Buchman , 2001**), sepsis (**Szabo , 2002**) and drug hepatotoxicity(**Lewis, 2000**). Liver function abnormalities present either as derangement of liver chemistry or overt clinical manifestations of liver disease(**Strassburg ,2003**). This problem (hepatic dysfunction) may be overlooked in the intensive care patient so, here we concentrate about the cause and predisposing factors of hepatic dysfunction in critically ill patient.

Aim of the work:

To evaluate abnormalities of liver functions in patient admitted in ICU and correlation these functions with clinical situations predisposing the patient for hepatic dysfunction.

REVIW OF LITERATURE

Chapter 1

The liver

Gross anatomy

The liver is a vital organ present in vertebrates and some other animals. The liver is necessary for survival; a human can only last up to 24 hours without liver function.

(Zakim D. et al, 2003)

It is situated in the upper and right parts of the abdominal cavity, occupying almost the whole of the right hypochondrium, the greater part of the epigastrium, and not uncommonly extending into the left hypochondrium as far as the mammillary line. In the male it weighs from 1.4 to 1.6 kilogram, in the female from 1.2 to 1.4 kilogram. **(gray; 2000)**

The relatively larger weight in infancy is mainly due to an enlargement of the left lobe. The weight of the liver relative to body weight decrease from 3% to 2% with age. With regard to size, the liver is on average 25 - 30 cm in width, 12 - 20 cm in length and 6 to 10 cm in thickness. The surface is smooth and shiny. The colour of the liver is brownish red. The lobular structure can be seen distinctly upon close inspection. The position is intraperitoneal (with the exception of the area nuda and the gall-bladder bed). **(Irwin et al; 2005)**

Surfaces : The liver possesses three surfaces, **superior, inferior and posterior**. A sharp, well-defined margin divides the inferior from the superior in front; the other margins are rounded. The superior surface is attached to the diaphragm and anterior abdominal wall by a triangular or falciform fold of peritoneum, the falciform ligament, in the free margin of which is a rounded cord, the ligamentum teres (*obliterated umbilical vein*). The line of attachment of the falciform ligament divides the liver into two parts, termed the right and left lobes, the right being much the larger. The inferior and posterior surfaces are divided into four lobes by five fossæ, which are arranged in the form of the letter H. The left limb