Study Of Complications Of Liver Cirrhosis In Relation To The Nutritional Status

Thesis

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*Before all and above all, thanks to **GOD** for every thing*

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*May **ALLAH** accept the work of all those and reward them for it.*

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ABSTRACT

Background: Malnutrition is a salient feature in patients with hepatic dysfunction; it is also an independent risk factor for morbidity and mortality in these patients. Factors that contribute to malnutrition in patients with hepatic failure include altered metabolic rate, fat malabsorption early satiety and impaired gastric emptying, frequent hospitalizations, over dietary restriction and glucose intolerance. **Objective:** The aim of work in this study is to assess the nutritional status among a group of Egyptian patients with Child's C liver cirrhosis and also to correlate malnutrition to various complications of liver cirrhosis.

Methods: This study conducted on 45 cirrhotic patients child C with or without complications .The patients were divided into two groups: group I included 3O patients with moderate to severe degree of malnutrition and group II which included 15 patients with mild degree of malnutrition.

Results: rate of various complications is higher in patients with severe malnutrition ,TSFT and MAC has the highest sensitivity 85.71 %,100% & specificity 90 %,60% respectively to rate of complications(p value <0.0001 &area under the ROC curve= 0.879).

Conclusion: it concluded that PCM is highly prevalent among patients with liver cirrhosis and it is directly related to the severity of the disease and to the rate of complications. Many tools are used to assess the nutritional status of patients with liver cirrhosis none of them is the gold standard for the nutritional assessment.

Keywords: Liver cirrhosis-malnutrition- complications.

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LIST OF ABBREVIATIONS

Akt	Activated serinethreonine-kinase
ALS	Acid-labile subunit
ALT	Alanine transaminase
AST	Aspartate Transaminase
AVS	Arterio venous shunting
BA	Bacterial activity
BCAA	Branched chain amino acids
BCLC	Barcelona clinic liver cancer
BCM	Body cell mass
BIA	Bioelectrical impedance analysis
BMI	Body mass index
CEE	Contrast echocardiography
CLD	Chronic liver disease
CNNA	Culture negative neutrocytic ascites
CRP	C - reactive protien
CTP	Child –Turrcotte-Pug classification
DEXA	Dual energy X-ray absorptiometry
ER	Endoplasmic reticulum
ESLD	End stage liver disease
ESPEN	European Society for Clinical Nutrition and Metabolism
EVL	Endoscopic vaso ligation
FDA	Food and Drug Administration

FFA	Free fatty acid
FHF	Fulminant hepatic failure
GABA	Gamma amino butyric acid
GH	Growth hormone
GHIGF-1	Growth hormone/insulin-like growth factor-1
GOV	Gastro esophageal varices
HBE	Harris Benedict equation
HBV	Hepatitis B Virus
HCC	Hepato Cellular Carcinoma
HCV	Hepatitis C Virus
HE	Hepatic encephalopathy
HGO	Human glucose output
HIV	Human Immune Dificiency Virus
HNE	Hydroxynonenal
HOMA	Homeostatic Model Assessment
HPS	Hepato pulmonary syndrome
HRCT	High resolution computed tomography
HRS	Hepato renal syndrome
IGF-1	Insulin-like growth factor-1
IGFBP-3	IGF-binding protein-3
INF	Interferon
IPVD	Intra pulmonary vascular vasodiltation
IR	Insulin Resistance
IRS-1	Insulin Receptor Substrate 1
IVNAA	Deuterium oxide dilution in vivo neutron activation analysis

LVLT	Living donor liver transplantation
MAC	Mid arm circumference
MAMC	Mid-arm muscle circumference
MDA	Malondialdehyde
MELD	Model of end stage liver disease
MI	Myo inositol
MRS	Magnetic resonance spectroscopy
mTOR	mammalian target of rapamycin
mTORC1	mammalian target of rapamycin complex one
MTP	Microsomal triglyceride transfer protein
NAA	N –acetyl aspartate
NAFLD	Non Alcholic Fatty Liver disease
NASH	Non Alcholic Steato Hepatitis
NCT	Number connection test
OLT	Orthotropic liver transplantation
OS	Oxidative stress
PCM	Protein calorie malnutrition
PDK1/2	Phosphoinositide-dependant kinase
PEG	Per cutaneous endoscopic gatrostomy
PELD	Pediatric end stage liver diseaese
PEM	Protein energy malnutrition
PH	Pulmonary hypertension
PHES	Psychometric hepatic encephalopathy score

PI3K	Phosphatidyl insositol-3-kinase
PN	Parenteral nutrition
PoH	Portal hypertension
PPAR	Peroxisome Proliferator-Activated Receptor
PPH	Porto pulmonary hypertension
PSHE	Porto systemic hepatic encephalopathy
PST	Performance status test
REE	resting energy expenditure
RFA	Radio frequency ablation
RHC	Right sided heart catheterization
SAAG	Serum ascites albumin glonulin ratio
SBP	Spontaneous bacterial peritonitis
SGA	Subjective global assessment
SREBP1c	Sterol regulatory element binding protein Ic
T2DM	Type 2 Diabetes Mellitus
TACE	Trans arterial chemo embolization
TBP	Total body potassium counting
Tc99-MMA	Technetium macro aggregated albumin
TGF-β	Transforming growth factor β
TIPSS	Trans internal jugular portosystemic shunting
TSFT	Triceps skinfold thickness
V/Q	Ventilation perfusion
VLDL	Very-low-density lipoproteins

INTRODUCTION AND AIM OF WORK

Introduction:

Protein-calorie malnutrition (PCM) is a common complication of liver cirrhosis, it has been found to be a risk factor for morbidity and mortality in these patients ***(McCullough et al., 1997).***

The prevalence of PCM in cirrhosis is about 20% in compensated liver disease to 65%–90% in decompensated liver cirrhosis ***(Caregaro et al., 1996).***

PCM has been reported in 100%in pre and post liver transplant, and malnutrition is an independent risk factor for morbidity and mortality in these patients .Frequently, patients with end stage hepatic failure will present with muscle wasting, decreased fat stores, and overt cachexia ***(Moriwaki , 2002).***

Early diagnosis of malnutrition is essential to allow appropriate treatment, since malnutrition is an important predictor of complications of liver disease and mortality. Disease-specific nutritional therapy should be considered for acute liver failure, sepsis, transplantation, and encephalopathy ***(Cabre et al., 1998).***

Studies showed that the severity of malnutrition is correlated with that of the liver disease and the development of serious complications such as hepatic encephalopathy, ascites, hepatorenal syndrome, post transplantation outcome, and mortality. Also, short term survival is reduced in parallel with severity of malnutrition ***(Dan et al., 2008).***

AIM OF THE WORK:

The aim of this work is to study the nutritional status in a group of Egyptian patients with liver cirrhosis Child C classified according to their nutritional status and to correlate the DEGREE OF MALNUTRITION TO THE RATE OF DIFFERENT COMPLICATIONS OF LIVER CIRRHOSIS.

Review of literature

Chapter One

Liver cirrhosis