PROTEIN-1 BETA IN PATIENTS WITH SPONTANEOUS BACTERIAL PERITONITIS BEFORE AND AFTER ANTIBIOTIC THERAPY

Thesis

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Presented by

Ahmed Sadek Sherif

M.B., B.Ch

Supervised by

Prof.Dr /Eman Mohamed EL-Gindy

Professor of Tropical Medicine

Faculty of Medicine - Ain Shams University

Prof.Dr / Nadia Abdelaaty Abdelkader

Professor of Tropical Medicine

Faculty of Medicine - Ain Shams University

Doctor/ Iman Fawzy Montasser

Lecturer of Tropical Medicine

Faculty of Medicine - Ain Shams University

Faculty of Medicine-Ain Shams University

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بسم الله الرحمن الرحيم

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا

عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

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aa	Amino acids
ACE	angiotensin - converting enzyme
ADH	antidiuretic hormone
AFP	Alpha fetoprotein
ALD	alcoholic liver disease
ALP	Alkaline phosphatase
ALT	Alanine aminotransferase
APRI	AST-to-platelet ratio index
AST	aspartate aminotransferase
BCAAs	branched-chain amino acids
C	Celsius
CCL	Chemokine (C-C motif) ligand
CCL3L1	Chemokine (C-C motif) ligand 3-like 1
CCRs	Chemokine (C-C motif) receptors
CD4	cluster of differentiation 4

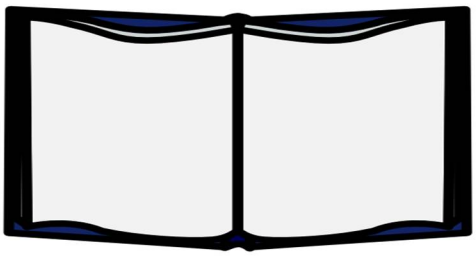
CD8	cluster of differentiation 8
cm	Centimeter
CO	carbon monoxide
CRP	C-reactive protein
CT	computed tomography
Dbil	Direct bilirubin
DDAVP	1-deamino-8-D-arginine vasopressin
dl	deciliter
DNA	Deoxyribonucleic acid
EAE	Experimental autoimmune encephalomyelitis
EDTA	ethylenediaminetetraacetic acid
ESLC	Egyptian Society of Liver cancer
FDA	Food and Drug Administration
FIB4	fibrosis 4 index
g	gram
Hb	Hemoglobin

HBs Ag	Hepatitis B surface antigen
HBV	hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	hepatitis C virus
HE	Hepatic encephalopathy
HFL	Hepatic focal lesions
HRP	Horseradish peroxidase
HRS	Hepatorenal Syndrome
HVPG	hepatic-vein pressure gradient
IFN	Interferon
IL	Interleukin
INR	International normalization ratio
IV	Intravenous
kDa	kilodalton
Kg	Kilogram
LPS	Lipopolysaccharides

LTC4	Leukotriene C4 (LTC4)
LVP	Large-volume paracentesis
MAP	Mitogen-activated protein
mEq	milliequivalent
min	Minute
MIP-1b	Macrophage inflammatory protein type 1 beta.
ml	Milliliter
mmol	millimole
MRI	Magnetic resonance imaging
NAFLD	non-alcoholic fatty liver disease
NASH	Non-alcoholic steatohepatitis.
ng	Nano gram
NO	Nitric oxide
OHE	Overt hepatic encephalopathy
PEG	percutaneous endoscopic gastrostomy
PELS	parenchymal extinction lesions

pg	picrogram
PI3K	phosphoinositide 3-kinase
PMN	polymorphonuclear leukocytes
RAAS	renin – angiotensin – aldosterone system
RES	reticuloendothelial system
rpm	Revolutions per minute
SAAG	serum-ascites albumin gradient
SBP	Spontaneous bacterial peritonitis
Tbil	Total bilirubin
Th2	T helper 2
TIMP-1	metallopeptidase inhibitor 1
TIPS	transjugular intrahepatic portosystemic shunt
TMP	Tetramethylbenzidine
TNF	Tumor necrosing factor
VCAM-1	vascular cell adhesion molecule
VEGF	vascular endothelial growth factor

Introduction



Introduction

Spontaneous bacterial peritonitis (SBP) is a potentially fatal, yet reversible cause of deterioration in patients with advanced cirrhosis. It is defined as a bacterial infection of the ascitic fluid in the absence of a focal contiguous source. This infection almost universally occurs in the background of severe liver disease ***(Sheer and Runyon, 2005)***.

Most cases of SBP are caused by gram-negative enteric organisms, such as Escherichia coli and Klebsiella pneumonia. Risk factors for the development of SBP include ascitic fluid total protein less than 1 g/d, gastrointestinal hemorrhage and previous history of SBP ***(Carbonnell et al., 2004).***

In a patient with ascites, the presence of new onset fever (temperature greater than 37.8^{o} c), abdominal pain, hepatic encephalopathy, metabolic acidosis, renal failure, hypotension, diarrhea, paralytic ileus, hypothermia, leukocytosis or other signs or symptoms of infection should prompt a diagnostic

paracentesis for ascitic fluid analysis and culture ***(Ginès et al., 2010)***.

Approximately 13% of patients with SBP can present without any symptoms ***(Runyon et al., 2009).***

The diagnosis of spontaneous bacterial peritonitis requires an elevated ascitic fluid absolute polymorphonuclear leukocyte (PMN) count of at least 250 cells/mm^3 and a positive ascitic fluid bacterial culture without an obvious intra-abdominal source of infection (***Sigal et al., 2007).***

Due to low bacterial density, up to 50% of patients with clinical signs of SBP have negative cultures of ascitic fluid. Routine diagnosis of SBP is based on absolute polymorphonuclear leukocytes (PMN) count in ascitic fluid (more than 250 cells/mm^3). Common incidence of asymptomatic SBP justifies a diagnostic paracentesis in all patients with new-onset ascites or already existing ascites requiring hospitalization ***(Runyon et al., 2009).***

Macrophage inflammatory protein type 1 beta (MIP-1β, CCL4) belongs to the family of chemokines, best known for their chemotactic and proinflammatory effects. MIP-1β is an acidic protein