



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغييرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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Measure the level of Ascetic Fluid
Mannose Binding Lectin in Patients with
Spontaneous Bacterial Peritonitis
And possibility for using as an indicator for
inflammation

Thesis

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In internal medicine

By

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا

إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

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List of Contents

Title	Page No.
List of Tables	i
List of Figures	ii
Introduction.....	1
Aim of the Work	2
Review of Literature	3
Cirrhotic Ascites	3
Spontaneous bacterial peritonitis.....	21
Mannose binding lectin	40
Patients and Methods	53
Results	59
Discussion	75
Summary	83
Conclusion	88
Recommendations	90
References	91
Arabic Summary	--

List of Tables

Table No.	Title	Page No.
Table (1):	Demographic features of the studied patients.....	59
Table (2):	Clinical presentation and examination of the studied patients.....	61
Table (3):	The blood picture in studied patients and serum creat.....	63
Table (4):	Liver and bleeding function of the studied patients.....	65
Table (5):	Serologic hepatitis viral markers and severity of liver cirrhosis assed by child and meld score in the studied patients	66
Table (6):	Ascitic fluid analysis in studied groups.and PVD.....	67
Table (7):	Ultrasound findings , and MBL of studied groups a خطأ! الإشارة المرجعية غير معرّنة	
Table (8):	MBL level in studied groups	70
Table (9):	Relation of MBL with the other studied parameters in asities with SBP	70
Table (10):	Relation of MBL with the other studied parameters in asities without SBP. خطأ! الإشارة المرجعية غير معرّنة	
Table (11):	Correlation of MBL with the other studied parameters in asities with SBP and asities without SBP and in all patients.....	87

List of Figures

Fig. No.	Title	Page No.
Figure (1):	Altered gut permeability and bacterial overgrowth in cirrhotic patients lead to translocation of intestinal bacteria to the systemic circulation and bacteremia. Seeding of bacteria to the ascitic fluid leads to spontaneous bacterial peritonitis.	23
Figure (2):	Gram-negative Escherichia coli	25
Figure (3):	MBL subunit.....	40
Figure (4):	MBL trimer.....	41
Figure (5):	MBL recognizes bacterial surfaces by their particular spacing of carbohydrate residues.....	43
Figure (6):	The main functions of complement are recruitment of inflammatory cells, opsonization of pathogens, and killing of pathogens.....	43
Figure (7):	MBL forms a complex with serine proteases	46
Figure (8):	Overview of the main components and effector actions of complement. Note that the MBL pathway involves the MBL protein, MASP-1, MASP-2, C4, and C2.	47
Figure (9):	Demographic features of the studied patients.....	60
Figure (10):	Demographic features of the studied patients.....	60
Figure (11):	Clinical presentation and examination of the studied patients.....	62
Figure (12):	serum leukocytic count between studied group.....	64
Figure (13):	serum creat between studied group	64
Figure (14):	meld score between studied group	66
Figure (15):	polymorphic count in ascetic fluid	68
Figure (16):	prothrombin time between studied group.....	68
Figure (17):	glucose level in ascetic fluid.....	69
Figure (18):	ultrasound finding in studied group خطأ! الإشارة المرجعية غير معرّنة	70
Figure (19):	serum MBL in studied group.....	70
Figure (20):	incidence of HCC in studied group خطأ! الإشارة المرجعية غير معرّنة	71
Figure (21):	relation between MBL and abdominal pain	71
Figure (22):	relation between MBL and fever	72
Figure (23):	relation between MBL and jaundice.....	72
Figure (24):	ROC curve analysis for MBL as a marker for SBP.....	74

INTRODUCTION

Spontaneous bacterial peritonitis is a very common bacterial infection in patients with cirrhosis and ascites .(*Wong et al.,2005*) when first described its mortality exceeded 90% but it has been reduced to approximately 20% with early diagnosis and treatment .(*Tandon and Garcia-Tsao.,2008*).

Mannose - binding lectin (MBL)is an important protein of humoral innate immune system with multiple carbohydrate recognition domain ,it is able to bind to sugar group displayed on the surface of wide range of micro organism and therepy provide first line defense ,it also activate complement MBL produced in liver in response to infection and is a part of many other factor termed acute phase protein.(*Herpes et al.2009*).MBL deficiency has been reported as risk factor for infection.(*Eisen et al.2008*) .

Finally the MBL deficiency predisposes patient with liver cirrhosis to develop spontaneous Bacterial peritonitis (*chong et al .2005*).

AIM OF THE WORK

To assess the role of Ascitic fluid mannose binding lectin as a possible marker of spontaneous bacterial peritonitis

REVIEW OF LITERATURE

Cirrhotic Ascites

Ascites is the most common complication of cirrhosis, and 60% of patients with compensated cirrhosis develop ascites within 10 years during the course of their disease. Ascites only occurs when portal hypertension has developed and is primarily related to an inability to excrete an adequate amount of sodium into urine, leading to a positive sodium balance (**Ripoll et al., 2007**).

Tandon and Garcia-Tsao (2008) suggested that renal sodium retention in patients with cirrhosis is secondary to arterial splanchnic vasodilation. This causes a decrease in effective arterial blood volume with activation of arterial and cardiopulmonary volume receptors, and homeostatic activation of vasoconstrictor and sodium-retaining systems (i.e., the sympathetic nervous system and the renin–angiotensin–aldosterone system). Renal sodium retention leads to expansion of the extracellular fluid volume and formation of ascites and edema. The development of ascites is associated with a poor prognosis and impaired quality of life in patients with cirrhosis.

Uncomplicated ascites:

Approximately 75% of patients presenting with ascites in Western Europe or the USA have cirrhosis as the underlying cause. For the remaining patients, ascites is caused by malignancy, heart failure, tuberculosis, pancreatic disease, or other miscellaneous causes (EASL,2010).

Diagnosis of ascites:

The initial evaluation of a patient with ascites should include history, physical examination, abdominal ultrasound, and laboratory assessment of liver function, renal function, serum and urine electrolytes, as well as an analysis of the ascitic fluid.

The International Ascites Club proposed to link the choice of treatment of uncomplicated ascites to a classification of ascites on the basis of a quantitative criterion. A diagnostic paracentesis with an appropriate ascitic fluid analysis is essential in all patients investigated for ascites prior to any therapy to exclude causes of ascites other than cirrhosis and rule out spontaneous bacterial peritonitis (SBP) in cirrhosis (EASL, 2010).

When the diagnosis of cirrhosis is not clinically evident, ascites due to portal hypertension can be readily differentiated from ascites due to other causes by the serum–ascites albumin

gradient (SAAG). If the SAAG is greater than or equal to 1.1 g/dl (or 11 g/L), ascites is ascribed to portal hypertension with an approximate 97% accuracy (**Runyon, 2009**).

Ascitic fluid inoculation (10 ml) in blood culture bottles should be performed at the bedside in all patients. Other tests, such as amylase, cytology, PCR and culture for mycobacteria should be done only when the diagnosis is unclear or if there is a clinical suspicion of pancreatic disease, malignancy, or tuberculosis (**Moore et al., 2003**).

A diagnostic paracentesis should be performed in all patients with new onset grade 2 or 3 ascites, and in all patients hospitalized for worsening of ascites or any complication of cirrhosis. Neutrophil count and culture of ascitic fluid (by inoculation into blood culture bottles at the bedside) should be performed to exclude bacterial peritonitis (**EASL,2010**).

It is important to measure ascitic total protein concentration, since patients with an ascitic protein concentration of less than 15 g/L have an increased risk of developing spontaneous bacterial peritonitis (Level A1) and may benefit from antibiotic prophylaxis (Level A1) (**European Association for the Study of the Liver, 2010**).

Measurement of the serum–ascites albumin gradient may be useful when the diagnosis of cirrhosis is not clinically

evident or in patients with cirrhosis in whom a cause of ascites different than cirrhosis is suspected (EASL,2010).

Prognosis of patients with ascites:

The development of ascites in cirrhosis indicates a poor prognosis. The mortality is approximately 40% at 1 year and 50% at 2 years. The most reliable factors in the prediction of poor prognosis include: hyponatremia, low arterial pressure, increased serum creatinine, and low urine sodium (**EASL, 2010**)

These parameters are not included in the Child-Turcotte-Pugh score (CTP score) and among them, only serum creatinine is included in the Model for end-stage liver disease (MELD score). Furthermore, since serum creatinine has limitations as an estimate of glomerular filtration rate in cirrhosis, these scores probably underestimate the mortality risk in patients with ascites. Since allocation for liver transplantation is based on the MELD score in several countries, patients with ascites may not receive an adequate priority in the transplant lists. Therefore, there is need for improved methods to assess prognosis in patients with ascites (**Heuman et al., 2004**).

Recommendations: Since the development of grade 2 or 3 ascites in patients with cirrhosis is associated with reduced