بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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Usefulness of AF Lactoferrin Levels in Patients with Liver Cirrhosis to Diagnose Spontaneous Bacterial Peritonitis

Thesis

Submitted for Partial Fulfillment of Master Degree in **Internal Medicine**

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2020

Acknowledgments

First and foremost, I feel always indebted to Allah *the Most Beneficent and Merciful.*

My profound thanks and deep appreciations to Prof. Tarek Mohamed Youssef, **Professor of Internal Medicine, Hepatology & Gastroentrology, Faculty of Medicine, Ain Shams University for his great support and advice, his valuable remarks that gave me the confidence and encouragement to fulfill this work.**

I am deeply thankful to Dr. Ahmed El Saady Mohmmed Khyal, **Assistant Professor of Internal Medicine, Hepatology & Gastroentrology, Faculty of Medicine, Ain Shams University for his great help, outstanding support, active participation and guidance.**

My profound thanks and deep appreciations to Dr. Mohamed Magdy Salama, **Lecturer of Internal Medicine, Hepatology & Gastroentrology, Faculty of Medicine, Ain Shams University for his great support and valuable remarks, meticulous supervision and continuous support.**

I can't forget all many thanks to all staff member of Internal Medicine, Faculty of Medicine, Ain Shams University for their kind support, and constructive criticism.

Elary Abdel Maseeh Poles

List of Contents

List of Tables

List of Figures

List of Figures **cont...**

List of Abbreviations

Abb.	Full term
ALP	*Alkaline phosphatase*
ALT	*Alanine transaminase*
APACHE	*Acute Physiology and Chronic Health Evaluation*
APCs	*Antigen-presenting cells*
AST	*Aspartate transaminase*
AUC	*Area under curve*
BT	*Bacterial translocation*
CBC	*Complete blood count*
CRP	*C-reactive protein*
DCs	*Dendritic cells*
ERK	*Extracellular signal-regulated kinase*
ESBL	*Extended-spectrum β-lactamase*
HBV	*Hepatitis B virus*
HCV	*Hepatitis C virus*
HTST	*High temperature/short time*
LC	*Liver cirrhosis*
LDH	*Lactate dehydrogenase*
Lf	*Lactoferrin,*
Lfcin	*Lactoferricin*
LPS	*Lipopolysaccharide*
MAPK	*Mitogen activated protein kinase*
MELD	*Model for end-stage liver disease*
MRSA	*Methicillin-resistant Staphylococcus aureus*

List of Abbreviations **cont...**

Abb.	Full term
PAMPs	*Pathogen-associated molecular patterns*
PCR	*Polymerase chain reaction*
PI3K	*Phosphoinositide 3-kinase*
PPI	*Proton pump inhibitors*
PT	*Prothrombin time*
RES	*Reticuloendothelial system*
ROC	*Receiver-operating characteristic*
SBP	*Spontaneous bacterial peritonitis*
SOFA	*Sequential Organ Failure Assessment*
TLRs	*Toll-like receptors*
TNF	*Tumor necrosis factor*
UV	*Ultraviolet*
XDR	*Extensively drug-resistant*

ABSTRACT

Background: Cirrhosis represents the final common histological pathway for a wide variety of chronic liver diseases. Occurrence of ascites is the most common presentation of liver cirrhosis. Spontaneous bacterial peritonitis (SBP) is observed in 15–26% of patients hospitalized with ascites.

Objectives: The aims of this study was to evaluate the usefulness of AF lactoferrin for the diagnosis of SBP and to identify a clinically useful cut-off level that can be used for future development of an important clinical, economic and time saving rapid bedside test for the diagnosis of SBP in cirrhotic ascites.

Patients and Methods: This study was conducted on 40 patients with decompensated chronic liver disease and ascites with and without spontaneous bacterial peritonitis admitted to Nasser institute for researches and treatment Hospital and Internal Medicine department, Faculty of Medicine, Ain Shams University from November 2017 to April 2018.

Results: Females were affected more than males by SBP, SBP has higher incidence in elderly compared to control group, no significant difference between studied groups regards to risk factors and Child class, HCV infection was the main etiology of liver cirrhosis in both groups while HBV infection was much less common with no significant difference between studied groups. Patients in SBP group showed positive reaction to CRP compared to control group with significant difference between them. No statistical significant differences between studied groups regards to abdominal ultrasonographic findings. Liver enzymes (ALT) and ALP were higher in SBP patients compared to non SBP patients with significant difference between them. SBP patients have higher TLC and lower MCV and platelets count compared to non SBP patients with significant difference between them. No statistical significant difference between studied groups regards to INR, Hb and MCH values.

Conclusion: Outcomes of our study provide evidence of the clinical usefulness of AF lactoferrin levels in patients with cirrhosis to differentiate those with and without SBP.

Keywords: AF Lactoferrin Levels, Liver Cirrhosis, Diagnose Spontaneous Bacterial Peritonitis

INTRODUCTION

Patients with liver cirrhosis (LC) are at a high risk of developing bacterial infections because of hypoactivity of phagocytic cells in the hepatic reticuloendothelial system, decreased production of complement, and bacterial influx into the general circulation through portacaval shunts ***(Shizuma, 2018).***

Bacterial infections constitute a major complication of cirrhosis. They account for 25%–46% of hospitalizations due to acute decompensation events in patients with cirrhosis and are associated with high morbidity and mortality ***(Marciano et al., 2019).***

Bacterial infections increase fourfold the probability of death of patients with decompensated cirrhosis, reaching a 30% mortality rate after the first month and 63% after the first year of follow-up ***(Arvaniti et al., 2010).***

Spontaneous bacterial peritonitis (SBP) is the most frequent bacterial infection in patients with cirrhosis, followed by urinary tract infection, pneumonia, skin and soft tissue infections, and spontaneous bacteremia ***(Piano et al., 2018).***

During or after an episode of SBP, patients frequently present signs of decompensation such as development or progression of ascites or hepatic encephalopathy, gastrointestinal

bleeding, and extrahepatic organ compromise such as renal failure ***(Shizuma, 2018).***

Lactoferrin is an iron-binding protein found in human mucosal secretions as well as in the specific granules of PMNL that is released on degranulation. Lactoferrin concentration is proportional to the degranulation of PMNL and can be used as a marker of inflammation ***(Fernandez and Gustot, 2012).*** Measurement of AF lactoferrin levels may be a reliable marker for the presence of PMNL and, so that, detection of SBP in patients with cirrhosis ***(Wu et al., 2015).***

Patients with cirrhosis have an increased risk of developing bacterial infection, followed by sepsis and death. Infection either is present at admission or develops during hospitalization in ~25–35% of patients ***(Abuelfadl et al., 2018).***

AF lactoferrin levels may be a reliable marker for the detection and diagnosis of SBP ***(Wu et al., 2015).***

AIM OF THE WORK

The aims of this study was to evaluate the usefulness of AF lactoferrin for the diagnosis of SBP and to identify a clinically useful cut-off level that can be used for future development of an important clinical, economic and time saving rapid bedside test for the diagnosis of SBP in cirrhotic ascites.