Correlation of Serum Neopetrin as an Inflammatory Marker to Different Stages of Liver Cirrhosis

Thesis

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Contents

Abbreviations

AAT ---------- Alpha1-antitrypsin

ADH ---------- Anti diuretic hormone

AFP ---------- Alpha feto protein

ALD ---------- Alcoholic Liver Disease

ALT ---------- Alanine aminotransferase

ANA ---------- Anti nuclear antibody

Anti-LKM Ab Anti- liver-Kidney-microsomal antibody

APC ---------- Antigen presenting cell

AST ---------- Aspartate transaminase

CHF ---------- Congestive Heart Failure

CMV ---------- Cytomegalo virus

CT ---------- Computerized tomogrph

DDR ---------- Discoidin Domain Receptors

DNA ---------- Deoxyribonucleic acid

ECM ---------- Extracellular matrix

EGF ---------- Epidermal growth factor

Fe ---------- Iron

FGF ---------- Fibroblast growth factor

GIT ---------- Gastrointestinal tract

GTP ---------- Guannine Tri-phosphate

HBsAg --------- Hepatitis B Surface Antigen

HBV ---------- Hepatitis B Virus

HCC ---------- Hepatocelllular Carcinoma

HCV ---------- Hepatitis C virus

HGF ---------- Hepatocyte growth factor

HIV ---------- Human immunodeficiency virus

HLA ---------- Human leukocyte Antigen

HPH ---------- Hepatopulmonary hypertensio

HPS---------- Hepatopulmonary syndrome

HPS---------- Hepatopulmonary syndrome

HPV ---------- Human papilloma virus

HRS ---------- Hepatorenal syndrome

HTN ---------- Hypertension

INH---------- Isonazide

INR ---------- International normalized ratio

IPVD ---------- Intrapulmonary vasodilatation

LC ---------- Liver Cirrhosis

LL---------- Lower Limb

MMP ---------- Matrix MetalloProteinases

NASH ---------- Non Alcoholic Steatohepatitis

PBC---------- Primary Biliary Cirrhosis

PDGF ---------- Platelet-Derived growth factor

PHG ---------- Portal hypertensive gastropathy

Sh ---------- Shistosoma Hematopium

Sm ---------- Shistosoma mansoni

Th1 ---------- T helper 1 cell

TIMP---------- Tissue Inhibitor of MetalloProteinases

TIPS---------- Transjagular intrahepatic portosystemic shunt

V.C---------- Vasoconstritor

V.D---------- Vasodilato

VEGF ---------- Vascular endothelial growth factor

WHO---------- World Health of Organization.

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Introduction

Neopterin, a pyrazino-pyrimidine compound, is synthesized by monocytes and macrophages in response to interferon-(IFN-) produced by activated T cells ***(Lhee et al., 2006)***.

Neopterin levels are elevated in conditions of T-cell or macrophages activation such as systemic lupus erythematosus and hepatitis C ***(Lhee et al., 2006)***. It enhances macrophage cytotoxicity through its interactions with reactive oxygen, nitrogen, and chloride species ***(Lahdo Imad et al., 2013)***.

Measurement of neopterin in body fluids can be a reliable indicator of the cellular (macrophages) immunological response in hepatitis C virus infection ***(Berdowska and Żwirska-Korczala, 2001)***. Moreover, enhanced concentrations of neopterin have been shown to have a prognostic significance ***(Farci et al., 2005)***.

Neopterin concentrations in humans reflect the degree of Th1-type immune activation. In chronic infections T cells compartmentalized in the liver contribute to hepatic damage, which is mainly Th1 mediated. It is these activated T cells in the liver that are responsible for the liver damage that results ***(Antoniello et al., 1989)***.

Neopterin concentrations in chronic liver disease increased irrespective of underlying cause and stage of disease. Serum neopterin levels correlated with serum AST, ALT activities, and degree of necrosis. Cirrhotic patients displayed higher levels than non-cirrhotic ***(Farci et al., 2005)***.

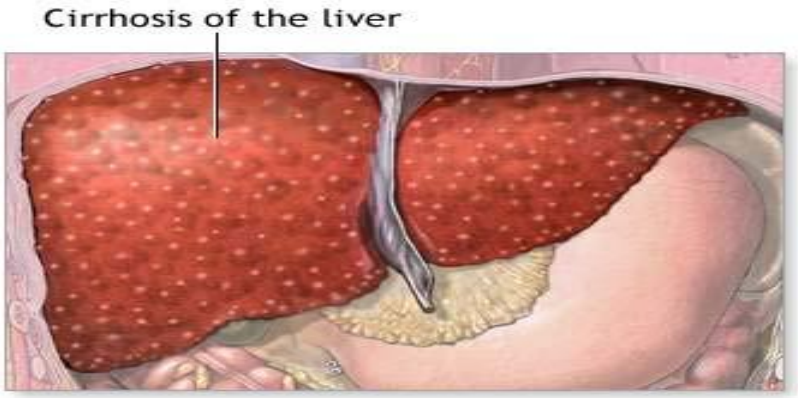
Neopterin is a more sensitive marker for severity of liver disease than established markers of inflammation ***(Lahdo Imad et al., 2013)***.

Aim of the Work

Correlation between serum levels of Neopetrin as a systemic inflammatory marker to different stages of liver cirrhosis.

Chapter (1)

LIVER CIRRHOSIS



Introduction:

The word cirrhosis comes from the Greek word kirrhos, which means orange Yellow **(Steingerður Anna, 2008).**

The definition of cirrhosis remains morphological, described by a working party for WHO in 1978 as: "a diffuse process characterized by fibrosis and the conversion of normal liver architectures into structurally abnormal nodules" **(Steingerður Anna, 2008),** but It is defined histologically as development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury, that leads to portal hypertension and end stage liver disease **(Sherlock et al., 2002)**. And also it can be known by three main characteristics: