DIAGNOSTIC VALUE OF SERUM LEPTIN AS A TUMOR MARKER IN HEPATOCELLULAR CARCINOMA

Thesis

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List of Abbreviations

AFP : Alfa fetoprotein

CEUS : Contrast-enhanced US

CLD **:** Chronic liver disease

GGT : Gamma glutamyl transferase

HBV : Hepatitis B virus

HCC : Hepatocellular Carcinoma

HCV : Hepatitis C virus

HFL **:** Hepatic focal lesion

HR : Hepatic resection

HSCs **:** Hepatic stellate cells

MDCT : Multidetector row CT

NAFLD : Non-alcoholic fatty liver disease

NASH : Non- alcoholic steatohepatitis

RFA : Radiofrequency Ablation

ROS : Reactive oxygen species

TACE : Transarterial Chemoembolization

TPCT : Triphasic CT

USG : Ultrasonogram

WHO : World Health Organization

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Abstract

Background

Leptin is a peptide hormone produced by adipocytes, acts on the energy balance of reproduction and immunomodulation, and this action is linked to the pathogenesis of many diseases. High levels of this hormone increase hepatic response to various stimuli of liver fibrosis. Leptin acts to mediate hepatic stellate cell activation and liver fibrosis throughout indirect effects on Kupffer cells

The aim

The aim is to evaluate diagnostic value of serum leptin as a tumor marker in hepatocellular carcinoma (HCC).

Methods

90 Egyptian subjects were conducted to this study after their written informed consent. They divided into 4 groups (30 patients with untreated HCC, 30 patients with treated HCC, 15 patients with end stage chronic liver disease without HCC and 15 healthy controls). They subjected to full history, examination, laboratory investigation and abdominal ultrasound. Serum leptin assessment is done using ELISA method.

Results

Leptin level is increased in all patients groups compared to control ((med. 40 IQR 37-50, med. 8 IQR 3-20, med. 2 IQR 1-4 VS med.1 IQR 1-1 ng/ml respectively) also it was higher in untreated HCC and treated HCC patients than patients without HCC. (med. 40 IQR 37-50, med. 8 IQR 3-20 VS med. 2 IQR 1-4). Furthermore, leptin level is higher in untreated HCC than treated HCC(med. 40 IQR 37-50 VS med. 8 IQR 3-20)

Leptin positively correlated with HCC

Introduction

Liver cancer is one of the leading causes of cancer deaths worldwide. In recent years, there is large number of deaths due to HCC recorded around the globe ***(Ferlay et al., 2015).***

Hepatocellular Carcinoma (HCC) is the major form of liver cancer. Risk factors for HCC include chronic HBV (hepatitis B virus) and HCV (hepatitis C virus) infections, autoimmune hepatitis, and chronic alcohol use.***(Yangand Roberts,2010)***,

Hepatocellular carcinoma (HCC) is a major complication associated with HCV virus infection, with significant mortality and morbidity rates. HCV-induced development of HCC is a gradual process and is affected by the duration of disease and presence of cirrhosis ***(Bruno et al., 2007)***.

The goal of HCV treatment is to eliminate the infection, decrease the rate of transmission to other individuals and reduce the risk of development of HCC ***(EASL, 2017).***

Leptin is a multifunctional peptide hormone with neuroendocrine activity and improving insulin sensitivity

playing an important role in bone formation and immune response modulation ***(Rosenbaum and Leibel, 2014)***.

High levels of this hormone increase hepatic response to various stimuli of liver fibrosis. Leptin acting via mediating hepatic stellate cell activation and liver fibrosis throughout effects on Kupffer cells. These effects are mediated by transforming growth factor-β that is considered a significant effector on cirrhosis development and progression ***(Magkos et al., 2015).***

Aim of the Study

Is to assess the diagnostic value of serum leptin as a tumor marker in hepato-cellular carcinoma in comparison to alfa fetoprotein.