Role of Serum Transforming Growth Factor Beta1 as a Marker of Hepatocellular Carcinoma In Patients With Cirrhosis Before And 1 Month After Radiofrequency Ablation

Thesis

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List of Abbreviations

AFP	Alpha fetoprotein
Alb	Albumin
ALP	Alkaline phosphatase
BCLC	Barcelona Clinic Liver Cancer
CA242	Cancer antigen 242
CEA	Carcinoembryonic antigen
CLIP	The cancer of the liver Italian program
CT	Computed tomographic scan
DNA	Deoxyribonucleic acid
ELISA	Enzyme linked immunosorbent assay
FNAB	Fine needle aspiration biopsy
GFs	Growth factors
Gm	Gram
HBs-Ag	Hepatitis B surface antigen
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HDV	Hepatitis D virus
INF-α	Interferon alpha
Kg	Kilogram
MCT	Microwave coagulation therapy
mg/L	Milligram per liter
mm	Millimeter
MRI	Magnetic resonance imaging

MVD	Microvessel density
NB	Note book
NF-κB	Nuclear factor kappaB
ng/ml	Nanogram per millimeter
nm	Nanometer
OLT	Orthotopic liver transplantation
PAI	Percutaneous acetic acid injection
PEL	Percutaneous ethanol injection
RF	Radiofrequency
RFA	Radiofrequency ablation
RNA	Ribonucleic acid
Sec.	Second
TACE	Trans arterial chemoembolization
TGFβ1	Transformiong growth factor beta-1
U/S	Ultrasound
Ug/L	Microgram per liter
Vs.	Versus

INTRODUCTION

Hepatocellular carcinoma (HCC) is the fifth most common neoplasm in the world, and the third most common cause of cancer-related death. It affects mainly patients with cirrhosis of any etiology. Patients with cirrhosis are thus usually included in surveillance plans aiming to achieve early detection and effective treatment ***(Llovet et al., 2004)***.

If diagnosed at an early stage, patients should be considered for any of the available options that may provide a high rate of complete response. These include surgical resection, liver transplantation, and percutaneous techniques of tumor ablation ***(Bruix et al., 2001)***.

A rise in serum alpha-fetoprotein (AFP) in a patient with cirrhosis should raise concern that HCC has developed. A cut-off value of 400ng/ml has been used for HCC ***(Di Bisceglie, 1999)***.

However, HCC is often diagnosed with lower levels of AFP in patients undergoing screening ***(Collier et al., 1998)***.

The imaging tests most commonly used for the diagnosis of HCC are ultrasound, computed tomography, magnetic resonance imaging, and angiography. Ultrasonography is traditionally used as an imaging study [in conjunction with AFP determination] for screening. A classic appearance on one of these imaging modalities combined with an elevated serum AFP concentration in the appropriate clinical setting is usually sufficient for establishing the diagnosis of HCC ***(Benvegnu et al., 2001)***.

Because of the limitations of serum AFP measurements, several other serum markers of HCC used alone or in combination with the serum AFP have been evaluated for diagnosis or determining prognosis in patients with HCC.

As an example, Des-gamma-carboxy prothrombin has also shown promise in the diagnosis of HCC ***(Marrero et al., 2003)***. Also, α-glutamyl transpeptidase isoenzyme, variant alkaline phosphatase have been suggested as additional tests for early diagnosis of HCC. Unfortunately, the clinical usefulness of these tests is not impressive. Plasma transforming growth factor beta 1 [TGF beta 1] has been reported to be elevated in HCC patients compared with cirrhosis patients. It has been reported

that TGF beta 1 mRNA was over expressed in HCC, especially in patients with small HCC and well differentiated HCC, compared with patients liver cirrhosis ***(Song et al., 2002)***.

- Radiofrequency ablation (RFA) is a thermal treatment technique designed to produce local tumor destruction by heating tumor tissue to temperature that exceed 50°C when tumors are heated to temperature above 45°C for more than 3 minutes ***(Lounsberry et al., 1995)***.

- It shows that radiofrequency tumor ablation is highly effective modality to treat primary and metastatic liver lesions. It is relatively safe and associated with minimal complications ***(Robert Gold Stein et al., 2000)***.

AIM OF THE WORK

This study is designed to evaluate role of TGF beta 1 as a marker of HCC in Egyptian patients with liver cirrhosis and its significance in evaluation of success of RFA for these patients.

So, TGF β1 was measured before and one month after treatment of HCC by RFA.

MALIGNANT TUMORS OF THE LIVER

- ***Primary Malignant Neoplasms Of The Liver:***
    - **Hepatocellular:**
        - Hepatocellular carcinoma.
        - Fibrolamellar carcinoma.
        - Hepatoblastoma.
    - **Biliary:**
        - Cholangiocarcinoma.
        - Cystoadenocarcinoma.
    - **Mesenchymal:**
        - Angiosarcoma.
        - Epithelioid hemangioendothelioma.
        - Embryonal sarcoma.
        - Leiomyosarcoma.
        - Rhabdomyosarcoma.
        - Primary hepatic lymphoma.
- ***Secondaries.***