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بالرسالة صفحات لم ترد بالأصل

Evaluation of Serum Voltage Gated Calcium Channel α2δ1 as a Novel Marker for Diagnosis of Hepatocellular Carcinoma in Cirrhotic Egyptian Patients

Thesis

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

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Al Saied Al Saied Al Refaey

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List of Abbreviations

Abb.	Full term
A2	*Annexin*
AA	*Aristolochic acid*
ACS	*Anorexia-Cachexia*
AFB1	*Aflatoxin B1*
AFP	*α-fetoprotein*
APAs	*Adrenal aldosterone-producing adenomas*
AUC	*Area under curve*
CaM	*Calmodulin*
CaMK	*CaM kinase II*
CEUS	*Contrast-enhanced ultrasound*
CP110	*Centrosomal protein*
CREB	*c-AMP-responsive element binding*
CSPH	*Clinically significant portal hypertension*
CT	*Computed tomography*
DCP	*Des-γ-carboxyprothrombin*
EGFR	*Epidermal growth factor receptor*
EPO	*Erythropoietin*
ER	*Endoplasmic reticulum*
FDG-PET	*Positron emission tomography with fluorodeoxyglucose*
FOXM1	*Forkhead box M1*
GP73	*Golgi protein-73*
GPC3	*Glypican-3*
GPI	*Glycosyl-phosphatidylinositol*
HCC	*Hepatocellular carcinoma*
HCV	*Hepatitis C virus*
HEK	*Human embryonic kidney*
HR	*Hazard ratio*
MAPK	*Mitogen-activated protein kinase*
MDK	*Midkine*
miRNAs	*MicroRNAs*
MRI	*Magnetic resonance imaging*
mTOR	*Mammalian target of rapamycin*

List of Abbreviations **cont...**

Abb.	Full term
NAFLD	*Nonalcoholic fatty liver disease*
NASH	*Nonalcoholic steatohepatitis*
NFAT	*Nuclear factor of activated T-cell*
OPN	*Osteopontin*
OS	*Overall survival*
PDGF	*Platelet-derived growth factor*
PIVKA II	*Prothrombin induced by vitamin K absence*
RAF	*Rapidly accelerated fibrosarcoma*
RFA	*Radiofrequency ablation*
SCCA	*Squamous cell carcinoma antigen*
SIRT	*Selective internal radiation therapy*
STAT3	*Signal transducer and activator of transcription 3*
suPAR	*Soluble urokinase plasminogen activator receptor*
TACE	*Trans arterial chemoemboliation*
TRXs	*Thioredoxins*
US	*Ultrasound*
VEGF	*Vascular endothelial growth factor*
VGCC	*Voltage Gated Calcium Channel*

ABSTRACT

Background: Hepatocellular carcinoma (HCC) is the most common primary liver tumor and represents the third-leading cause of cancer-related death in the world. The incidence of HCC continues to increase worldwide, with a unique geographic, age, and sex distribution. The most important risk factor associated with HCC is liver cirrhosis, with the majority of cases caused by chronic infection with hepatitis B (HBV) and C (HCV) viruses and alcohol abuse, although nonalcoholic fatty liver disease is emerging as an increasingly important cause. Primary prevention in the form of HBV vaccination has led to a significant decrease in HBV-related HCC, and initiation of antiviral therapy appears to reduce the incidence of HCC in patients with chronic HBV or HCV infection. Additionally, the use of ultrasonography enables the early detection of small liver tumors and forms the backbone of recommended surveillance programs for patients at high risk for the development of HCC. Cross-sectional imaging studies, including computed tomography and magnetic resonance imaging, represent further noninvasive techniques that are increasingly employed to diagnose HCC in patients with cirrhosis.

Objectives: Evaluation of Serum voltage gated calcium channel α2δ1 as a novel Marker for diagnosis of Hepatocellular Carcinoma in Cirrhotic Egyptian Patients. **Patients and Methods:** This study had been carried out on 90 subjects, age range 21-73 year selected from Internal medicine and Hepatology outpatient clinics and inpatient wards at Ain shams university hospitals. Subjects were divided as follow: Group A(Case): 40 patients with liver cirrhosis without Hepatocellular carcinoma and group B (Control): 40 patients with liver cirrhosis and Hepatocellular carcinoma and group C: 10 normal population for detecting normal value of the marker with exclusion criteria including age < 18 years old and Patients diagnosed with malignancy other than HCC. **Results:** The study subjects are classified into three groups: Group A cirrhotic patients without HCC, Group B cirrhotic patients with HCC and Group C normal individual subjects. **Conclusion:** Serum voltage gated calcium channel levels were significantly higher in patients with HCC and mildly elevated in patients with liver cirrhosis compared to the control group. Thus it can be used as a tumor marker for HCC.

Keywords: Hepatocellular Carcinoma, Voltage Gated Calcium Channel A2δ1, Alpha Fetoprotein.