Role of MDCT in Prediction of Response to Transcatheter Arterial Chemoembolization in Unresectable Hepatocellular Carcinoma Patients

Essay
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By

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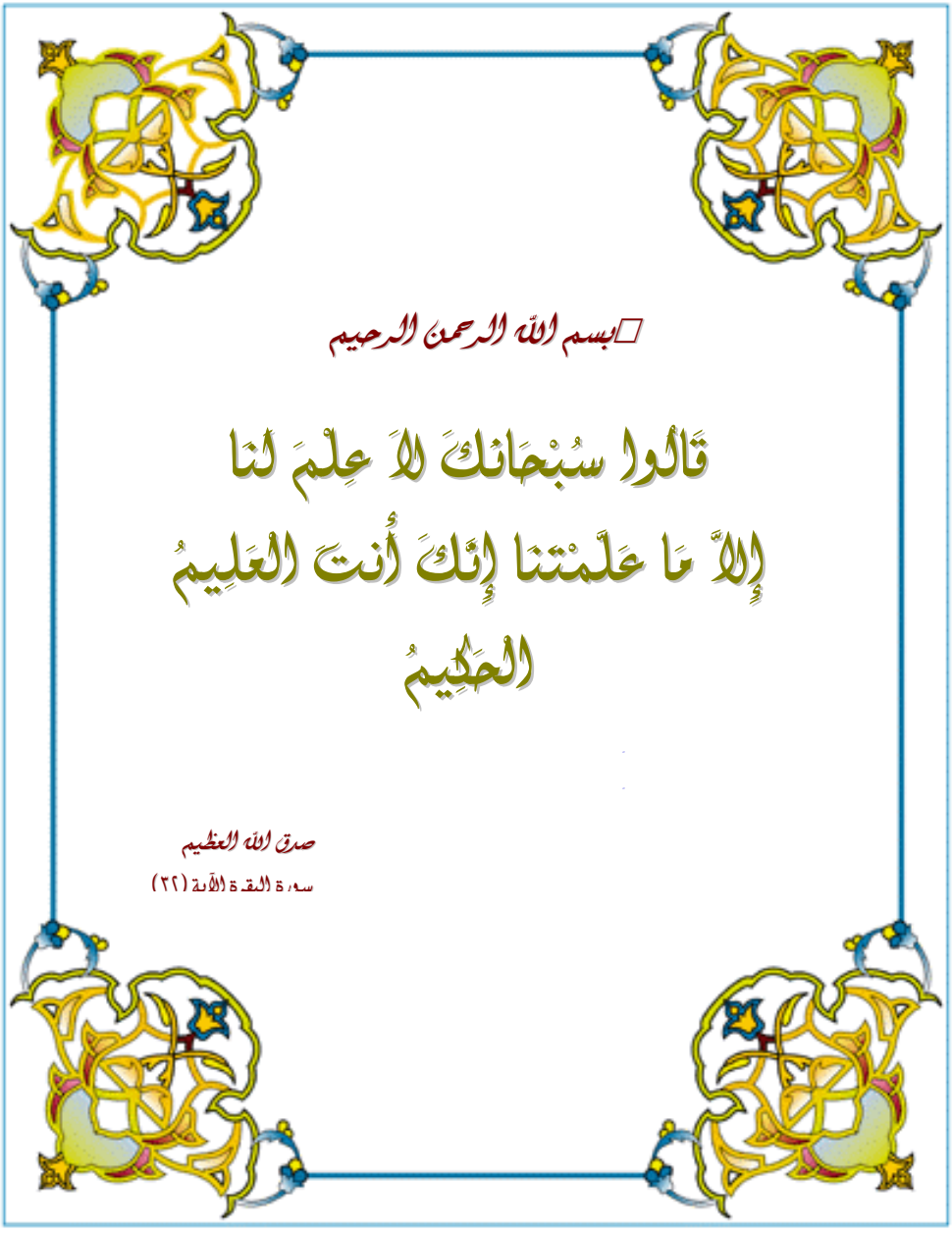
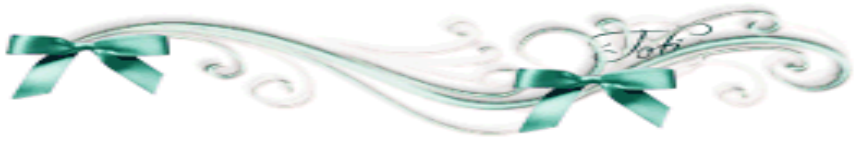


بسم الله الرحمن الرحيم

قَالُوا سُبْحَانَكَ لاَ عِلْمَ لَنَا
إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ العَلِيمُ
الحَكِيمُ

صدق الله العظيم
سورة البقرة الآية (٣٢)



Acknowledgement

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Ahmed Ibrahim Ibrahim Nassar

Contents

List of Abbreviations

AASLD	American Association for the Study of Liver Diseases
Acc	Accessory
AFP	Alpha feto protein
AJCC	American Joint Commission for Cancers
Alb	Albumin
ALT	Alanine transferase enzyme.
AO	Aorta
AST	Aspartate transferase enzyme
BCLC	Barcelona Clinic of Liver Cancer
CA	Celiac artery
CBD	Common bile duct
CHA	Common hepatic artery
CHD	Common hepatic duct
CLIP	Cancer of the Liver Italian Program
Cm	Centimeter
CR	Complete response
CT	Computaed tomo graphy
DSA	Digital subtraction angiography
EASL	Europian association for the study of the liver
ECOG	Eastern Cooperative Oncology Group
EORTC	Europian organization for research and treatment of cancer
ESLC	Egyptian society of liver cancer
FCAT	Federative Committee on Anatomical Terminology
Fig	Figure
FU	Flurouracil
GDA	Gastroduodenal artery
GI	Gastro intestinal

List of Abbreviations (Cont.)

HA	Hepatic artery.
Hb	Hemoglobin.
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HFL	Hepaticc focal lesion
HU	Hounsfield unit
HVs	Hepatic veins.
HVWP	Hepatic Venous Wedge Pressure
ISRN	International Scholarly Research network
IV	Intravenous
IVC	Inferior vena cava
JNCI	Ournal of the National Cancer Institute
Kg	Killogram
L	Lumbar
LGA	left gastric artery
LGA	Left gastric artery
LHA	Left hepatic artery
LHV	Left hepatic vein
LNs	Lymph nodes.
MDCT	Multi detector CT
MHV	Middle hepatic vein
MIP	Maximum intensity projection
mRECIST	Modified response evaluation criteria in solid tumors
MRI	Magnetic resonance imaging
MSCT	Multi slice computed tomography
NASH	Nonalcoholic steatohepatitis
NHTMRI	National Hepatology and Tropical Medicine Research Institute

List of Abbreviations (Cont.)

PC	Prothrombin concentration
PD	Progressive disease
PHA	Proper hepatic artery
PR	Partial response
PT	Prothrombin time
PV	Portal vein.
RAPV	The right anterior portal vein
RECIST	Response evaluation criteria in solid tumors
RHA	Right hepatic artery
RHV	Right hepatic vein
RPPV	Right posterior portal vein
RRA	Right renal artery
SA	Splenic artery
SMA	Superior mesenteric artery
SMV	Superior mesenteric vein
ST	Stable disease
SV	Splenic vein
T.Bil	Total bilirubin
TACE	Trans arterial chemo embolization
TNM	Tumor, nodes, metastases staging
US	Ultrasound
WHO	World Health Organization

List of Tables

List of Figures

List of Figures (Cont.)

List of Figures (Cont.)

Abstract

This study is to evaluate the role of triphasic CT in prediction of the prognosis of the irresectable HCC patients who had locally treated with transcatheter arterial chemo embolization by studying the enhancement (vascularity) pattern & the volume changes of the HCC after TACE.Our study included triphasic CT study & serum AFP level for assessment of the target lesion after doing TACE as a loco regional therapy for HCC.In our study, there is a highly significant relationship between the maximum initial diameter of the target lesion before TACE & the maximum diameter of the lesion after TACE as the initial maximum diameter of the target lesion is increased the maximum diameter of the lesion after TACE is also increased.

Keyword: AFP,TCC,TACE, Hepatocellular, Chemoembolization

Introduction

Hepatocellular carcinoma (HCC) is the most common primary liver cancer, the fifth most common cancer and the third most common global cause of cancer-related deaths. In 2000, there were 564,000 new cases and 549,000 deaths from HCC worldwide, indicating the devastating prognosis of this tumor ***(Shariff et al., 2015).***

The major risk factors for HCC are the presence of cirrhosis, and HBV/HCV coinfection. Other factors, such as aflatoxin and nonalcoholic steatohepatitis (NASH), are important and prevalent in certain areas of the world ***(Shariff et al., 2015).***

Unlike other forms of cancer, the diagnosis of HCC does not always require histological confirmation and HCC is usually diagnosed by tumor marker and radiology such as ultrasonography, C.T and MRI ***(Bolondi et al., 2014).***

Current effective treatments for HCC include liver resection, transplantation, various local ablative and trans-arterial therapies. Surgical resection and liver transplantation are the main curative treatments. Unfortunately, only around 20 % patients, mostly diagnosed by regular screening, may benefit from these surgical therapies ***(Yau et al., 2012)***.

Chemoembolization is the most commonly used treatment for HCC that cannot be submitted to surgery. It is based on the objective of tumor devascularization, in which the oxygen and nutrient supply to the tumor is blocked, resultng in tumor necrosis ***(Geschwind et al., 2012).***

Evaluation of the therapeutic effect of HCC after TACE is primarily based on the findings of imaging studies. MDCT is the standard imaging technique for monitoring the

effectiveness of TACE by studying the enhancement (vascularity) pattern & the volume changes of the HCC after TACE and for evaluation of the presence of viable tumor in HCC treated with TACE to determine the subsequent treatment or to avoid unnecessary treatment. ***(William et al., 2015)***

The aim of this study:

Is to evaluate the role of MDCT in prediction of the response of the irresectable HCC patients who had locally treated with transcatheter arterial chemo embolization by studying the enhancement (vascularity) pattern and the volume changes of the HCC after TACE.