Risk factors for recurrence of hepatocellular carcinoma after radiofrequency ablation

Thesis

Submitted for partial fulfillment of master degree
in Tropical Medicine

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بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا إلا ما

علمتنا إنك أنت العليم الحكيم

صدق الله العظيم

سورة البقرة آية (٣٢)

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Protocol of THESIS
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Introduction

Hepatocellular carcinoma (HCC) is the fifth most common malignancy in the world ***(El-Serag, ٢٠٠٢)*** complicating liver cirrhosis in most cases. It causes an estimated ١٢٥٠٠٠٠ deaths every year worldwide ***(Globocan٢٠٠٠ and Bazarbashi, ٢٠٠٠)***. HCC constitutes ٧,٥% of all cancer types in males and is the ٥th most frequent cancer site for males after lung, prostate, stomach and colorectal cancer. For females, it is the ٨th most common, accounting for ٣,٥٪ of all cancer types. Its incidence is increasing worldwide ranging between ٣٪ and ٩٪ annually ***(Velazquez et al., ٢٠٠٣)***.

HCC is a tumor that satisfies the requirements of neoplasia for which screening is justified ***(França et al., ٢٠٠٤)***. There is a well-defined "at-risk population"; this is the population that needs to undergo screening, namely, patients with cirrhosis and among patients without cirrhosis, those with chronic hepatitis B. The most widely used screening tests include; periodic ultrasonography, Alpha-fetoprotein (AFP) and serum levels of protein induced by vitamin K absence II (PIVKA II) ***(Krahn et al., ٢٠٠٤)***. Screening of those patients helps early diagnosis and detection of tumors in the initial stages of development, and so, available treatments may be considered curative ***(França et al., ٢٠٠٤)***.

Different treatment modalities for HCC are available, including those with potentially curative ability as liver transplantation, surgical resection and locoregional ablative techniques {percutaneous ethanol injection (PEI)

and radiofrequency thermal ablation (RFA)}, while palliative treatment options include transarterialchemoembolisation (TACE) ***(Bruix and Sherman, ٢٠٠٥)*** and transarterialradioemolisation (TARE) ***(Dancey et al., ٢٠٠١)***. Introduction of molecular targeted therapy for HCC treatment has shown satisfactory results in terms of antitumoral effect and survival of patients with HCC ***(Villanueva et al., ٢٠٠٧)***.

Radiofrequency ablation (RFA) is a novel means of treating patients with both metastatic and primary liver cancer***(Fontana et al., ٢٠٠٢)***.It consists of a thermal treatment technique designed to produce approximately ٣-cm diameter coagulative necrosis of the tissue in a single session. Moreover, RFA can be performed percutaneously under local anesthesia ***(Francica and Marone, ١٩٩٩)***. RFA seems to be the most effective treatment among other locoregional therapies. The main advantages of RFA include low morbidity and mortality rates, effective tumor ablation and preservation of maximal normal liver parenchyma ***(Kwok-Chiu and Tung-Ping Poon, ٢٠٠٥)***.

However, despite the high complete necrosis rate of RFA, early tumor recurrence within one year, either local tumor recurrence or denovo tumor formation, remains a significant problem***(Yamanaka et al., ٢٠٠٥)***.The intrahepatic recurrence rate is ٢٠٪ during a mean follow up period of ١٨ months***(Yamakado et al., ٢٠٠٤)***.However, it is unclear which factors influence intrahepatic recurrence.

Aim of the work

The aim of this retrospective cohort study is to analyze the risk factors of intra-hepatic distant recurrence (IDR) of hepatocellular carcinoma within ١ year after radiofrequency ablation.

Patients and Methods

Patients:

The study will be conducted at Tropical Medicine department and HCC unit in AinShams University Hospital. Data will be retrieved from the files of patients with hepatocellular carcinoma (HCC) who underwent radiofrequency ablation (RFA) from ١/٢٠٠٦ till ١٢/٢٠١٠.

Patients who fulfill the inclusion criteria will be enrolled in the study.

Those patients subjected to RFA according to:

Inclusion criteria:

١- Proved diagnosis of HCC according to AASLD practice guidelines ***(Bruix and Sherman, ٢٠٠٥)***.

٢- Patients underwent RFA for HCC with BCLC (The Barcelona-Clinic- Liver-Cancer staging system) stage A ***(Bruix and Sherman, ٢٠٠٥)*** with no eligibility or ability to do transplantation or resection.

٣- Patients should be followed-up for more than ١٢ months i.e. recurrence within ١ year.

٤- Patients with INR < ١,٥ or prothrombin concentration > ٥٠٪.

٥- Platelet count > ٥٠٠٠٠ cell/mm٣.

Exclusion criteria:

١- Presence of extra-hepatic metastasis or gross vascular invasion.

٢- Child class C patients.

٣- Follow up period of less than ١٢ months.

Criteria of HCC diagnosis according to AASLD practice guidelines (Bruix and Sherman, ٢٠٠٥):

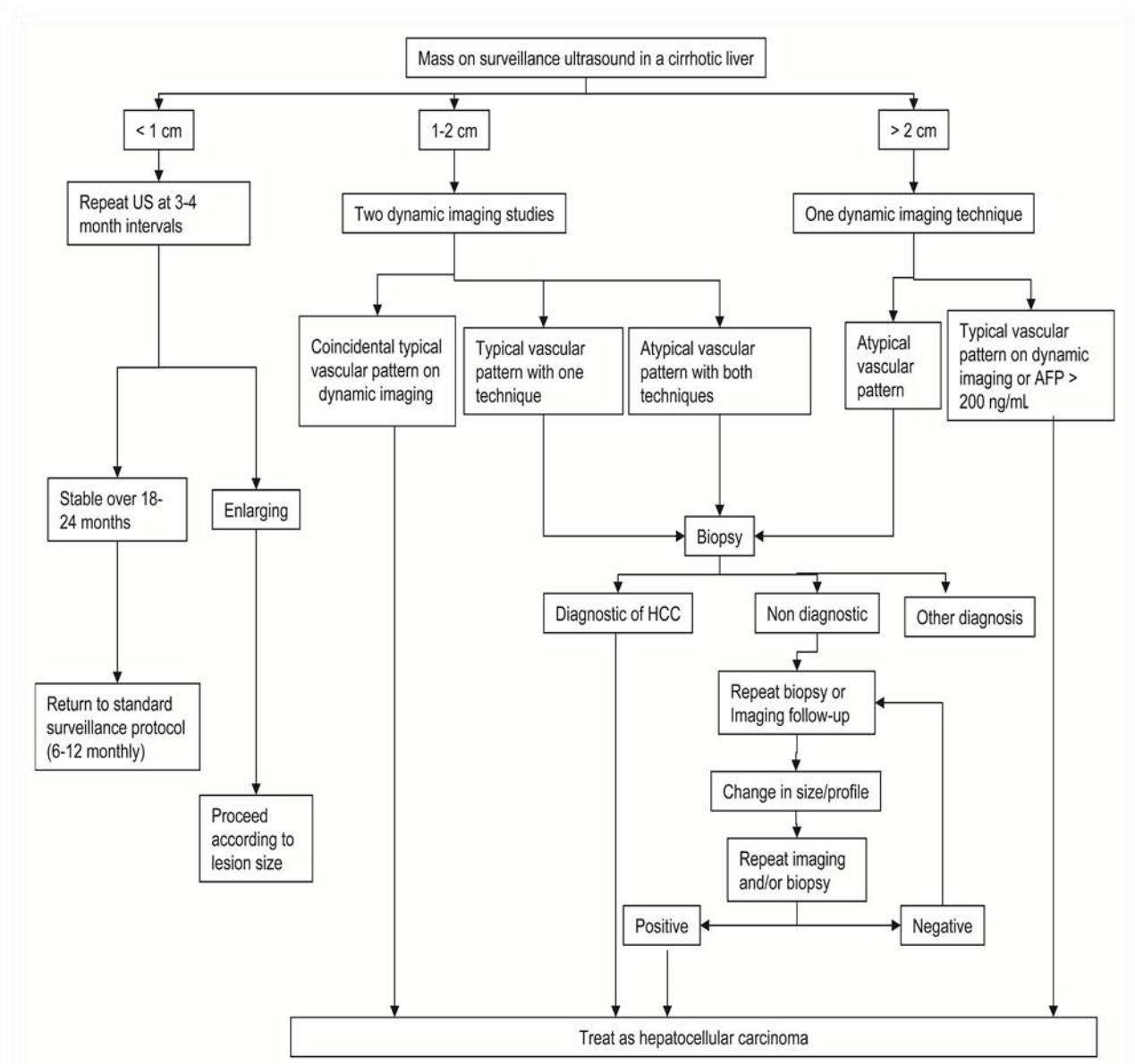

Fig. 1. A suggested algorithm for investigation of a nodule found on ultrasound during screening or surveillance. Note that nodules smaller than 1 cm initially which enlarge over time should be investigated using one of the other two algorithms shown depending on the size of the nodule. The typical vascular pattern referred to means that the lesion is hypervascular in the arterial phase, and washes out in the portal/venous phase. All other patterns are considered atypical.

BCLC stage A according to AASLD practice guidelines (Bruix and Sherman, ٢٠٠٥):

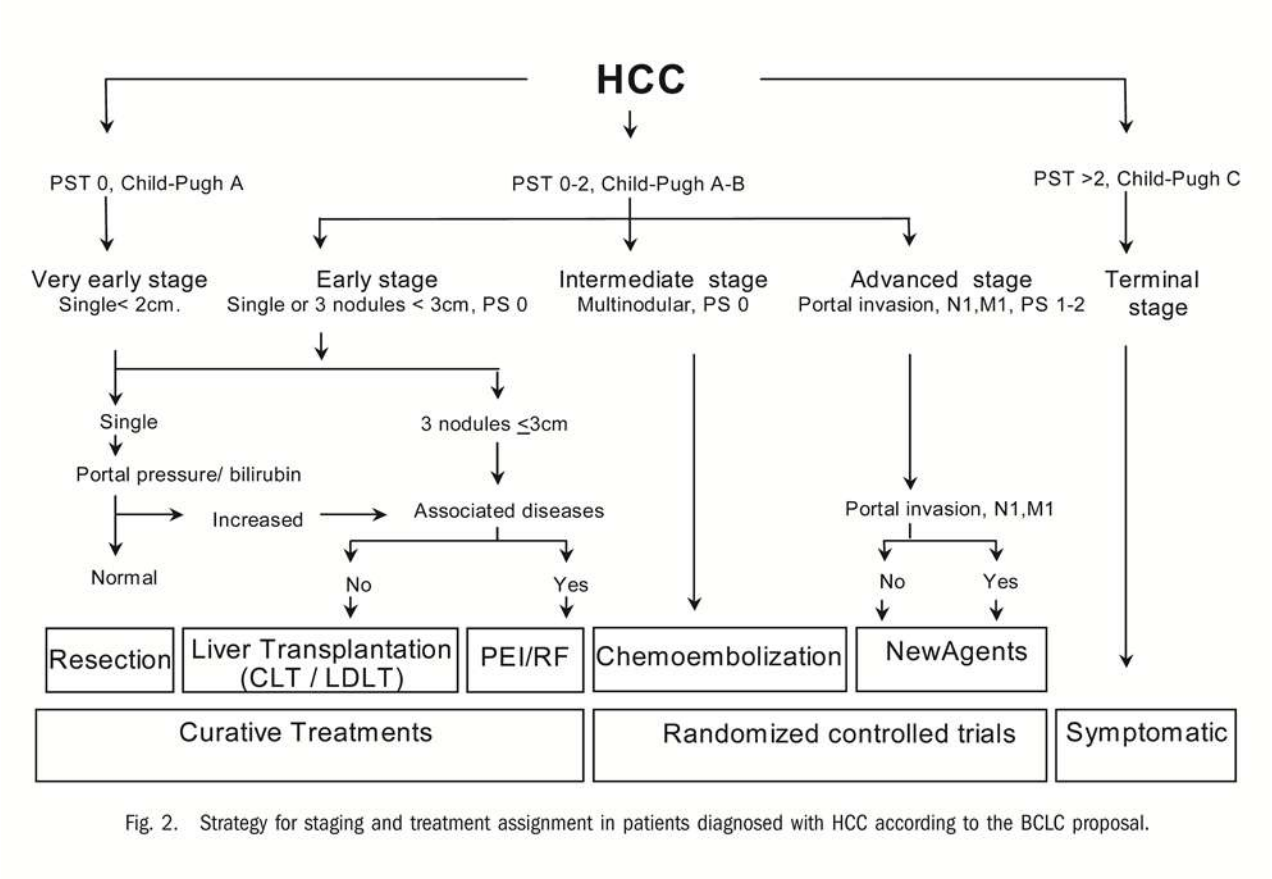

Fig. 2. Strategy for staging and treatment assignment in patients diagnosed with HCC according to the BCLC proposal.

Methods:

The following parameters will be documented from the records of the patients.

(A) Pre-treatment assessment

١. Full personal history taking and thorough clinical examination.

٢. Complete blood picture

٣. Liver profile including alanine aminotransferase (ALT), aspartate aminotransferase (AST). Serum bilirubin, serum albumin, serum alkaline phosphatase and prothrombin time (PT).

٤. Etiology of the underlying liver disease (viral, autoimmune,etc).

٥. Renal function tests.

٦. Abdominal ultrasound.

٧. Alpha fetoprotein(AFP) level.

٨. Triphasic spiral abdominal CT.

(**B) Follow up of patients**

Patients were followed up by AFP and triphasic spiral CT performed ١ month after RFA and then every ٣ months.

(C) Assessment of risk factors for the intrahepatic distant recurrence (IDR)

Intrahepatic distant recurrence of HCC was defined -based on standardization of terminology and reporting criteria by the international working group of image-guided tumor ablation- as appearance of a lesion with typical enhancement characteristics for HCC after RFA, but distant from the original ablative zone ***(Goldberg et al., ٢٠٠٥)***. IDR was evaluated for patients for whom complete coagulation was achieved without recurrence in the same sub-segment as the primary nodule.

The enrolled patients will be divided into ٢ groups according to presence or absence of IDR. The following potential risk factors will be reviewed and analyzed: Age, gender,etiology of CLD,pre-treatment serum platelet, pre-treatment serum albumin, bilirubin, PT, pre-treatment serum AST, ALT, pre- and ١ month post-treatment AFP, Child-Pugh classification, nodule diameter, number of HCC, complete ablation after ١ month, whether RFA was the initial treatment or not, DM.

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عوامل الخطر لتكرار ظهور سرطان الكبد الأولى بعد التردد الحرارى

بروتوكول رسالة
توطئة للحصول علي درجة الماجستيرفى طب المناطق الحارة

مقدمة من

طبيب/محمود رمضان محمد

بكالوريوس الطب والجراحة

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