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The value of measurement of circulating tumor cells in hepatocellular carcinoma

Fatma Khalaf¹, Nashwa Sheble¹, Gehan Hamdy², Moones A Obada¹, Gamal Y Abouria¹ and Enas A Khattab³¹National Liver Institute-Menoufia University, Egypt²Cairo University, Egypt³Fayoum University, Egypt

Background & Aim: Liver cancer is the fifth most common cancer in men and the seventh in women. During the past 20 years, the incidence of HCC has tripled while the five year survival rate has remained below 12%. The presence of circulating tumor cells (CTCs) reflects the aggressive nature of the tumor during the development of the HCC. CTCs detection and identification can be used to estimate prognosis and may serve as an early marker to assess antitumor activity of treatment. CTCs are an interesting source of biological information in order to understand dissemination, drug resistance and treatment-induced cell death. The aim is to estimate the CTCs (AFP mRNA & TGF- β 1 mRNA) in the peripheral blood of patients with HCC as an early non-invasive marker of HCC detection and prognosis.

Patients & Methods: The study was done on 100 patients, 58 patients with hepatocellular carcinoma (HCC), 42 patients with liver cirrhosis (LC) and 20 healthy volunteers as a control group. Detailed clinical history and examination were carried out. Complete blood count, liver function test, serum Albumin, serum AFP, AFP mRNA, serum TGF- β 1 and TGF- β 1 mRNA were measured. Abdominal ultrasound was done for all studied subjects and CT scan abdomen for those with HCC to determine the size and number of tumor.

Results: The detection rate of AFP mRNA was 39.7%, 11.9% and 5% in patients with HCC, LC and control subjects respectively with a significant expression in HCC patients compared to other groups. Also TGF- β 1 mRNA expression was significantly high in HCC cases with detection rate 60.3%, 14.3% in HCC and LC respectively while it was not detected in the controls. Both CTC were correlated with Milan criteria. The serum levels of AFP and TGF- β 1 was significantly higher in HCC patients.

Conclusion: TGF- β 1 mRNA is a more reliable marker for diagnosis of HCC and if combined with AFP mRNA yielded better prediction of HCC prognosis. Since HCC is among the cancers with worst prognosis, early diagnosis and treatment are essential for better outcome.

Biography

Fatma A Khalaf completed her MD from Biochemistry Department, Menoufia Faculty of Medicine, Menoufia University, Egypt and became Lecturer of Biochemistry at the same university in 2008. She has published more than 10 papers in reputed journals. She was a Supervisor on more than 5 Master's theses. She has a membership in about 4 medical societies.

Dr_khalaf268@yahoo.com

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