Evaluation of serum squamous cell carcinoma antigen as a novel biomarker for diagnosis of hepatocellular carcinoma in Egyptian patients

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Abstract

BACKGROUND: Hepatocellular carcinoma (HCC) is the fifth most common malignancy in the world. In Egypt, HCC was reported to account for about 4.7% of chronic liver disease (CLD) patients. Squamous cell carcinoma antigen (SCCA) has been reported to be strongly expressed in HCC tissue hampering its extensive use in clinical practice.

AIM: To evaluate the clinical usefulness of serum SCCA levels as a serological marker for early detection of HCC among high-risk patients compared to AFP.

MATERIALS AND METHODS: The study comprised of three groups. Group A included 30 patients with CLD diagnosed based on clinical, laboratory, and ultrasonographical investigations; group B included 49 patients with HCC diagnostically confirmed by spiral CT, elevated alpha-fetoprotein (AFP), and/or liver biopsy; and group C, the control group, included 15 healthy subjects matched for age and sex. All groups were subjected to thorough history taking, full clinical examination, and laboratory investigations including liver functions, viral markers, and AFP and SCCA estimation using ELISA technique.

RESULTS: This study revealed a highly significant difference between patients with HCC, CLD, and controls regarding serum SCCA levels (5.138 ± 7.689, 1.133 ± 0.516, and 0.787 ± 0.432 ng/ml, respectively). SCCA level was persistently elevated in patients with HCC with normal AFP levels representing its useful role in early detection and follow-up of patients treated for HCC. The area under the curve (AUC) of SCCA was 0.869 (95% CI 0.783–0.929), the cut-off value was established at 1.5 ng/ml with sensitivity of 77.6% and specificity of 84.4%). The difference between AUC of SCCA and that of AFP was 0.09 which mounted statistical significance.

CONCLUSIONS: SCCA could represent a useful tool as a marker for detection of HCC.