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Plasma IGF-1-molecular stratification of hepatocellular carcinoma patients

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Hepatocellular carcinoma (HCC) staging has three key roles: accurately predict survival, guide therapy decisions, and stratify patients in clinical trials. Notably, cirrhosis and HCC together form a two-disease state that independently affects patients' survival. The Child-Pugh (CP) score is the current standard tool in clinical practice for assessment of cirrhosis in HCC patients and for stratification of patients in HCC therapy trials. However, the CP score is relatively quantitative and uses five variables: three objective laboratory-based; albumin, prothrombin time, and bilirubin, in addition to two subjective clinical variables; hepatic encephalopathy and ascites. These clinical variables are difficult to grade clinically, may be precipitated by other non-liver diseases. Therefore, a major refinement of CP score is needed to optimize HCC management and improve patients' poor outcome. Circulating levels of insulin-like growth factor (IGF)-1 decrease sharply in patients with HCC and CLD because the liver is responsible for synthesis of most of plasma IGF-1. Our recently reported biomarker studies showed that the plasma IGF-1 level correlated significantly with the underlying CLD status, overall survival (OS) duration, and also reported that the integration of IGF-1 level into different HCC staging systems significantly refined stratification of HCC according to prognosis ($P < 0.0001$). Our previous studies indicated that the median OS was about 6 months in HCC patients with a low IGF-1 level (≤26 pg/mL). The overall goal of our proposed approach is to develop a noninvasive plasma biomarker-based strategy for personalized HCC classification and treatment through integration of IGF-1 into CP parameters.

Biography

Dr. Ahmed O Kaseb graduated in 1996 (MBBS) from Cairo University School of Medicine, Egypt. After graduation, Dr. Kaseb began working at the University of Michigan, Ann Arbor, as a research fellow focusing on oncogenic viruses and cancer biomarkers. Later, he joined the MD Anderson Cancer Center in Houston, Texas, as an assistant professor of GI Medical Oncology, to focus on hepatobiliary malignancies in July 2007. His primary research interest is identifying some of the key prognostic and predictive molecular biomarkers that underlie malignant development and progression of HCC. Dr. Kaseb is interested to develop more informative prognostic and predictive molecular staging systems for HCC, with priority efforts given to the identification and characterization of potential targets for therapeutic intervention.

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