ALBI grade as a new player in hepatocellular carcinoma

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Hepatocellular carcinoma (HCC) is a common malignancy in South Africa and Asia. Increasing incidence of HCC in other parts of the world has also been observed. The management and prognosis of HCC depend not only on tumor burden itself but also heavily on liver functional reserve. Assessment of liver dysfunction is therefore an integral part in the management of HCC. The Child-Turcotte-Pugh (CTP) classification system was initially designed to assess prognosis after surgery for variceal bleeding in cirrhotic patients, and it has been widely used for decades in assessing the severity of liver dysfunction. Many HCC staging systems, including the currently recommended Barcelona Clinic Liver Cancer (BCLC) staging system, adopt CTP classification as an indicator of liver disease severity.

The CTP classification is not without its shortcomings. Some variables, such as albumin and ascites, are intercorrelated, whereas others such as ascites and encephalopathy, may be subject to inter-observer variation. Alternatively, incorporating serum bilirubin, creatinine, and prothrombin time, the model for end-stage liver disease (MELD) was widely applied to prioritize organ allocation for end-stage cirrhotic patients awaiting liver transplantation. However, the use of the MELD score in HCC patients with less severe liver dysfunction had been challenged. As a result of international collaboration, the albumin-bilirubin (ALBI) grade was proposed as a simple and objective method for assessment of liver function in HCC. The ALBI grade was calculated based on pre-treatment serum albumin and bilirubin level. Although the ALBI grade has been validated externally by several independent research groups, its clinical feasibility is still under critical evaluation.

One of the advantages of using ALBI grade in predicting the outcome of HCC patients is its simple design—only albumin and bilirubin are used. However, its predictive accuracy in early stage HCC after curative therapy is unclear. In this issue’s Journal of the Chinese Medical Association, Dr. Chen et al. reported the long-term prognosis of patients with single HCC <2 cm (equivalent to BCLC stage 0) after radiofrequency ablation. The authors found that the ALBI grade was strongly associated with the occurrence of tumor recurrence and patient’s long-term survival. These data further highlight the rationale of using ALBI in assessing the outcomes for patients with very early stage HCC that is traditionally considered to associate with a favorable outcome. Based these findings, the ALBI grade may be further employed to evaluate the suitability of future clinical trial design.

A potential weakness of the ALBI grade is that it does not incorporate the status of portal hypertension. Blood platelet count was recently proposed as a surrogate marker of portal hypertension to develop the platelet-ALBI (PALBI) grade. Albumin, bilirubin, and platelet count can be readily obtained from routine blood tests. The ALBI and PALBI grade are thus evidence-based measurements for hepatic dysfunction in HCC patients. A more recent study showed that among CTP class A patients, the PALBI grade can further differentiate into three distinct prognostic group independent of treatment modality. As such, the PALBI grade may deserve further evaluation in Dr. Chen’s patient cohort. In conclusion, the CTP classification and MLD score are essential but far-from-perfect tools to represent liver functional reserve in HCC. Both ALBI and PALBI grade are objective, discriminatory, and evidence-based methods of assessing liver dysfunction. Both models are more clinically feasible especially in patients with minimal liver dysfunction who undergo aggressive therapies. It is crucially important to implement these objective models into current HCC staging systems to further enhance their prognostic ability.

REFERENCES