Letter to the Editor

ALBI Score as a Novel Tool in Staging and Treatment Planning for Hepatocellular Carcinoma: Is It Sufficient?

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Dear Editor

We read the paper “Albumin-bilirubin (ALBI) grade as part of the evidence-based clinical practice guideline for HCC of the Japan Society of Hepatology: A comparison with the liver damage and Child-Pugh classifications”, published in a recent issue of *Liver Cancer* [1], with interest. In this multicenter study including 3,495 patients with hepatocellular carcinoma (HCC) undergoing different therapies, the authors show that the ALBI grade can be used as a marker of liver functional reserve in HCC patients from different geographical regions in Japan. We have consistently reported that in a Taiwanese cohort of 3,182 HCC patients, ALBI grade is a feasible marker of liver reserve for HCC from early- to advanced-stage HCC [2]. Two other independent studies from Hong Kong and Europe/USA confirmed the predictive role of ALBI grade in 3,696 and 2,426 HCC patients, respectively [3, 4]. All these studies show the potential application of the ALBI grade as a prognostic predictor for HCC. Although these findings are interesting, a few critical issues may deserve our attention.

The Barcelona Clinic Liver Cancer staging system is the currently recommend treatment guideline and endorsed by the two major academic liver societies, AASLD and EASL. However, multiple staging systems have been proposed during the past two decades and generally claimed to have better prognostic performance. The apparent lack of consensus may result from heterogeneous nature of tumor biology and variable treatment strategies from different parts of the world [5]. Therefore, the ALBI grade, as a refinement of the Child-Turcotte-Pugh (CTP) classification, should be validated in the existing HCC staging systems to see if it can perform better than the CTP classification, model for end-stage liver disease (MELD) score, indocyanine green retention (ICG) test, and other composite liver reserve models.

Of particular interest, a more recent proposal suggested that adding platelet count into the ALBI equation (PALBI grade) could further enhance the prognostic power of the ALBI grade [6]. The PALBI score was calculated as the following equation: $2.02 \times \log_{10} \text{bilirubin} - 0.37 \times (\log_{10} \text{bilirubin})^2 - 0.04 \times \text{albumin} - 3.48 \times \log_{10} \text{platelets} + 1.01 \times (\log_{10} \text{platelets})^2$. PALBI grade was defined as grade 1 (score ≤ -2.53), grade 2 (score > -2.53 and ≤ -2.09), and grade 3 (score > -2.09). The accuracy of this updated version of the ALBI grade has been validated in our patient cohort [2]. In this study, we show that the PALBI score may even outperform the ALBI grade. There are some possible explanations for this finding. The PALBI grade incorporates blood platelet

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count as an indicator of paraneoplastic syndrome of HCC, which is associated with the severity of cancer. In addition, among many CTP class A patients, PALBI grade can further differentiate into three distinct prognostic groups. Moreover, PALBI grade can identify three different survival groups for patients undergoing resection, ablation, and chemoembolization, suggesting its prognostic power is independent of treatment modality. As such, the PALBI grade could be a more robust tool in survival prediction. Therefore, based on the results by Hirooka et al. [1], the prognostic performance of the PALBI-based Japan Integrated Staging (JIS) system should be evaluated to compare with ALBI-based JIS and original JIS system.

In summary, Hiraoka et al.'s study [1] provides new evidence of using ALBI grade in clinical practice. A further step may be equally important to incorporate ALBI/PALBI-based models into current HCC staging systems to refine their prognostic accuracy. Future studies from internationally collaborative cohorts are required to consolidate these issues.

Disclosure Statement

There is no conflict of interest.

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