had before the donation in the LLD group. Nevertheless, sensitivity analysis (Table S6) in our study showed that the mortality of the LLD group with or without comorbidities was comparable with Group I.2 The high mortality rate in the LLD group was not dependent on the underlying comorbidities. Considering that the median follow-up duration was 8 years in our study, we expect that longer follow-up may provide us more definitive outcomes.

Our study revealed that self-harm and cancer are the important causes of death in LLDs. Most LLDs being young and healthy, long-term psychological support and continuous regular medical monitoring after liver donation is necessary. The safety of LLDs cannot be sacrificed for any reason and we need to be vigilant against continued expansion of LLD selection. We believe that not only short-term but also long-term management plans are needed for LLDs.

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Authors' contributions
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Liver dysfunction in Barcelona Clinic Liver Cancer-2022 update: Clear as day or still in fog?

To the Editor:

We read with great interest the article by Reig and colleagues presenting the 2022 update of one of the most used staging systems for hepatocellular carcinoma (HCC), the Barcelona Clinic Liver Cancer (BCLC) staging system.[1] The current version is improved over its predecessor, with further stratification of the heterogenous BCLC-B group, the addition of newer immunotherapy options for the BCLC-C group and consideration of liver transplant (LT) as an option for those with tumor burden acceptable for transplant regardless of their liver dysfunction. However, there remains a lot to be desired, especially regarding the use of liver function in BCLC stage allocation and linking the first treatment option to be considered with the current system.

fdb 9.1.450/W UnicodeThe suggested classification recommends classifying a patient's liver function into two dichotomous classes, "preserved liver function" and "end-stage liver function" for stage allocation and prognosis. Patients with decompensation in the form of jaundice, ascites, and hepatic encephalopathy (HE) are labeled as having "non-preserved liver function" and those with compensated cirrhosis are further classified based on their albumin-bilirubin (ALBI) score.[2] Hence the use of the dichotomous classification of patients with HCC based on liver function potentially prevents patients with any decompensation from being classified into BCLC stage 0, A, B, or C; even though a subgroup might have tumor burden and tumor-related symptoms concordant with these stages, and might derive benefit from coupled stage-appropriate treatment options. Patients with HCC often present late during their course of liver disease, and almost 50% are Child-Pugh status B or C and have some decompensation, such a classification will potentially prevent a significant fraction of patients from receiving stage-appropriate therapies.[3] Moreover, in areas with predominant hepatitis B related HCC, adequate antiviral treatment has not only been shown to prevent recurrence but also improve liver function so that a number of patients on antiviral therapy become eligible for curative treatment.[4,5]

At the other end of the spectrum are those patients labeled as "end-stage liver function" and classified as BCLC-D and linked to supportive care. However, the term "end-stage liver function" is not well defined as often used synonymously with "liver failure" or "decompensation".[6] In stark contrast to other terminal illnesses, LT is a viable treatment option for patients

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with end-stage liver function. Moreover, even patients with decompensation are heterogeneous depending on the quantification of their decompensation, viz patients with minimal HE or mild ascites have a better prognosis than those with overt HE or tense ascites.[7] Hence, the use of a dichotomous classification might not serve the purpose of stage allocation and be subject to misinterpretation and consequent misclassification of patients. We do agree with the authors that treatment decisions for patients with HCC are often complex and should take into account multiple dimensions and not just a single variable, but the appeal of such staging systems lies in their unambiguity, so that they are not open to more than one interpretation.[1]

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BCLC 2022 update: Important advances, but missing external beam radiotherapy

To the Editor:
Congratulations to the Barcelona Clinic Liver Cancer (BCLC) group on the 2022 update of the staging, prognosis and treatment guidelines for hepatocellular carcinoma (HCC), which are commonly cited to guide clinical decision-making for HCC worldwide.[1] This update of the 2018 guidelines incorporates recent, practice changing trials of systemic therapies in patients with advanced HCC (BCLC C). The BCLC group has incorporated clinical decision making when the "first treatment option" is not feasible or if there is progression, which the group refers to as "treatment stage migration" (TSM). In this context, transarterial radioembolization (TARE) has been incorporated as an option for select patients with BCLC 0-A HCC on the basis of a recent retrospective study.[2] We agree with the emphasis on a multi-disciplinary approach to HCC, which includes input from hepatology, surgery, radiology, medical oncology, interventional radiology and radiation oncology.

It is notable that the 2022 updated guidelines do not include external beam radiotherapy (EBRT) as a treatment option in the algorithms for HCC, which is surprising in the context of expanded treatment options that are commonly used when considering "TSM." In addition to numerous retrospective studies, multiple prospective studies from multiple continents have demonstrated the safety and efficacy of EBRT, including stereotactic body radiotherapy and proton beam therapy (PBT), for all BCLC stages. A few important randomized controlled trials (RCTs) have been published since the 2018 BCLC update. For

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