**Letters to the Editor**

**Financial support**
The authors received no financial support to produce this manuscript.

**Conflicts of interest**
All authors declared no conflict of interest.

**Authors' contributions**
Conception: Xiao Xu, Tian Yang; Manuscript preparation: Xiao Xu, Tian Yang; Critical revision: Wan Yee Lau, Tian Yang. All authors reviewed the paper and approved the final version.

**Supplementary data**
Supplementary data to this article can be found online at https://doi.org/10.1016/j.jhep.2022.01.002.

**References**

Author names in bold designate shared co-first authorship


Xiao Xu1,2
Wan Yee Lau3,4
Tian Yang1,3,5

1Department of General Surgery, Cancer Center, Division of Hepatobiliary and Pancreatic Surgery, Zhejiang Provincial People’s Hospital, Affiliated People’s Hospital, Hangzhou Medical College, Hangzhou, Zhejiang, China

2Department of Hepatobiliary Surgery, Affiliated Hospital of Nantong University, Nantong University, Jiangsu, China

3Department of Hepatobiliary Surgery, Eastern Hepatobiliary Surgery Hospital, Navy Medical University (Second Military Medical University), Shanghai, China

4Faculty of Medicine, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong SAR, China

*Corresponding author. Address: Department of General Surgery, Cancer Center, Division of Hepatobiliary and Pancreatic Surgery, Zhejiang Provincial People’s Hospital, Affiliated People’s Hospital, Hangzhou Medical College, Hangzhou, Zhejiang, China; Department of Hepatobiliary Surgery, Eastern Hepatobiliary Surgery Hospital, Navy Medical University (Second Military Medical University), 225 Changhai Road, Shanghai 200438, China.

E-mail address: yangtianehbh@smmu.edu.cn (T. Yang)

---

**Letters to the Editor**

We appreciate the interest garnered by the BCLC 2022 model update. The new version has incorporated the evidence-based novelties generated in recent years, while also adding a section devoted to clinical decision making at the time of first evaluation and during a patient’s clinical evolution. No clinical practice guideline or recommendation review will ever have enough granularity to firmly recommend the most beneficial approach for an individual patient.

The comments by Hallemeier et al. call for the incorporation of radiation therapy into the recommendations based on scientific society guidelines and a series of published studies. Current data are encouraging and indicate that radiation has activity. However, the degree of evidence of survival benefit is not high and the recommendation could just be conditional. This justified the current BCLC model, but at the same time we already stated at the right part of the figure that other alternative sequences of treatment may be considered but that they are not proven. In this setting, SBRT could be considered and in the text we stated that “Stereotactic body radiation bears antitumoral activity but further prospective studies are needed to define its role”. This is fully concordant with the strong support of Hallemeier et al. for further prospective randomized controlled trials of radiation therapy.
The letter by Xu et al.\(^2\) raises the controversy around the evaluation of performance status (PS) and to what extent PS 0 and 1 should be joined in a single category, while also asking for BCLC model guidance for specific clinical scenarios where the evidence is limited. Clinical evaluation of patients is not easy and clinicians have to spend the required time to assess the symptomatic or asymptomatic status of their patients. Performance status 0 is easy to assess because the patient is asymptomatic. When tumor-related symptoms are present the outcome of patients is impaired whether they are treated at an early, intermediate or advanced stage, or if left untreated. Hence, we strongly disagree with the proposal to merge PS 0 and PS 1 and we stress again that symptoms related to comorbidities do not mean PS 1. Regarding hepatic vein invasion, we have to recall that the BCLC model already includes the term vascular invasion, which also accounts for the hepatic veins. Such a pattern is far less common than portal vein invasion, which is why comments about vascular invasion usually refer to the portal vein. Management of biliary invasion is a complex and heterogeneous clinical event. It implies poor prognosis and interventions are usually palliative with limited impact on survival. Finally, recommendations for ruptured tumors are not included in the BCLC model because this is a complication of HCC and the heterogeneity of the clinical profiles of patients suffering such an event is part of the clinical decision-making section. The lack of prospective studies prevents a robust recommendation about its management.

Finally, the letter by Elhence and Shalimar\(^3\) comments on the evaluation of liver function and the need to provide a well-defined tool for it. We comment in the manuscript that evaluation of liver function will not be fully accomplished by the Child-Pugh system or MELD; clinicians should consider several parameters to provide an optimal assessment of the liver functional reserve for an adequate treatment recommendation for the specific evolutionary stage of the patient. This is why we felt that preserved vs. non-preserved were valid terms that require the evaluation by an expert hepatologist who should become a very active member of any multidisciplinary team devoted to liver cancer.

In summary, we are pleased with these debates and interactions, and are confident that the updated BCLC model will be a key tool both for conventional clinical practice and research.

**Financial support**
The authors received no financial support to produce this manuscript.

**Conflict of interest**
The authors declare no conflicts of interest that pertain to this work. Please refer to the accompanying ICMJE disclosure forms for further details.

**Authors’ contributions**
Both authors contributed equally.

**Supplementary data**
Supplementary data to this article can be found online at [https://doi.org/10.1016/j.jhep.2022.02.026](https://doi.org/10.1016/j.jhep.2022.02.026).

**References**

Maria Reig*  
Jordi Bruix*  
BCLC group, Liver Unit, Digestive Disease Institute, Hospital Clinic, IDIBAPS CIBEREHD, University of Barcelona, Barcelona, Spain  
*Corresponding authors. Address: BCLC group, Liver Unit, Digestive Disease Institute, Hospital Clinic, IDIBAPS CIBEREHD, University of Barcelona, Barcelona, Spain.  
E-mail addresses: mreig1@clinic.cat (M. Reig), jbruix@clinic.cat (J. Bruix)