

Appropriate surgical therapy for patients with hepatocellular carcinoma beyond Milan criteria

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Beyond the Milan criteria (MC) for hepatocellular carcinoma (HCC) are relevant to Barcelona Clinic Liver Cancer (BCLC) classification B or intermediate group (1). Despite BCLC group recommended non-surgical therapy for intermediate HCC, liver resection has been applied to certain groups of patients (2). Some case series and cohort studies have suggested a benefit of liver transplantation (LT) in intermediate HCC patients with limited tumor burden, and this remains to be confirmed in an RCT (3). Cirrhotic patients with intermediate HCC slightly beyond the MC and within the “up-to-7” rule benefit from LT, with 5-year survival approaching 70% (4). MC is widely used across the world to select LT candidates in HCC patients. However the MC may be too strict because a substantial subset of patients who have HCC exceed the MC and who would benefit from LT may be unnecessarily excluded from the waiting list.

In an article published in the latest issue of *Ann Surg*, Professor Zaydfudim *et al.* focused on the survival after resection or transplantation of HCC beyond the MC. And they also explored the better outcomes, as mentioned, and intermediate stage HCC in LT compared with resection, and bridge therapy in these patients did increase outcomes after LT. However, in comparing them with the resected patients, there were not very many in that group.

In the article, Zaydfudim *et al.* found that successful tumor down-staging is probably best metric of better disease biology. Authors' data clearly showed that those patients

who are successfully downstaged and transplanted had the best outcomes. MC based on morphology, which are often inappropriate to express the tumor's biological behavior and aggressiveness, offer only a static view of the disease burden and is frequently unable to correctly stratify the tumor recurrence risk after LT (5). This article proved importance of tumor biology in view of lesser recurrence and improved survival beyond MC on the basis of subgroup analyses. Authors shed light on the surgical outcome through direct comparisons of liver resection to LT in patients with HCC beyond MC.

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Footnote

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