

**Predictive factors for transition to conversion therapy in hepatocellular carcinoma using atezolizumab plus bevacizumab**

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## Abstract

**Background:** To identify predictive factors associated with successful transition to conversion therapy following combination therapy with atezolizumab and bevacizumab in the treatment of unresectable hepatocellular carcinoma (HCC).

**Methods:** In total, 188 patients with HCC, who received atezolizumab plus bevacizumab combination therapy as the first-line chemotherapy, were studied. Patients who achieved complete response (CR) with systemic chemotherapy alone were excluded. Clinical factors possibly linked to successful transition to conversion therapy and the achievement of cancer-free status were identified.

**Results:** Fifteen (8.0%) patients underwent conversion therapy. In the conversion group, there was a significantly higher proportion of patients with Barcelona Clinic Liver Cancer (BCLC) stage A or B (73.3% versus [vs.] 45.1%;  $P=0.03$ ), and tended to have lower Child-Pugh scores and alpha-fetoprotein levels. Multivariate analysis revealed that BCLC stage was a predictive factor for the implementation of conversion therapy (A or B; odds ratio 3.7 [95% confidence interval 1.1–13];  $P=0.04$ ). Furthermore, 10 (66.7%) patients achieved cancer-free status, and exhibited a smaller number of intrahepatic lesions at the start of treatment (3.5 vs. 7;  $P<0.01$ ), and a shorter interval between systemic chemotherapy induction and conversion therapy (131 vs. 404 days;  $P<0.01$ ). In addition, the rate of achieving cancer-free status by undergoing surgical resection or ablation therapy was significantly higher ( $P=0.03$ ).

**Conclusion:** BCLC stage was the sole predictive factor for successful transition to conversion therapy when using combination therapy with atezolizumab and bevacizumab to treat HCC. Furthermore, a small number of intrahepatic lesions and early transition to conversion therapy were associated with the achievement of cancer-free status.

**Key words:** atezolizumab; bevacizumab; hepatocellular carcinoma; conversion therapy; real-world practice; Barcelona Clinic Liver Cancer stage; Child-Pugh score; alfa-fetoprotein; tumor response; cancer-free

**List of abbreviations:** ABC conversion, atezolizumab plus bevacizumab curative conversion; AFP, alpha-fetoprotein; AFP-L3, lens culinaris agglutinin-reactive alpha-fetoprotein isoform; ALBI, albumin-bilirubin; BCLC, Barcelona Clinic Liver Cancer; CR, complete response; CT, computed tomography; DCP, des-gamma-carboxy prothrombin; DCR, disease control rate; HCC, hepatocellular carcinoma; MTA, multimolecular target agent; MRI, magnetic resonance imaging; ORR, overall response rate; PD, progressive disease; PR, partial response; SD, stable disease