

Liver enzyme producing hepatocellular carcinoma treated with transarterial radioembolization

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Background: Transarterial radioembolization (TARE) has become an increasingly recognized treatment option in intermediate or advanced-stage hepatocellular carcinoma (HCC) patients, particularly due to its relatively limited arterial ischemia and comparable response to that of conventional transarterial chemoembolization (TACE). We present a case of an advanced-stage HCC presumed as liver enzyme producing HCC, which was successfully treated with TARE.

Case: A 57-year-old male patient was referred to the outpatient clinic with right flank pain, whose liver magnetic resonance imaging showed an 11-cm-sized HCC with intrahepatic metastasis and right portal vein tumor thrombosis (Figure 1). Dynamic computed tomography scans also showed metastasis to the left scapula. His initial laboratory test results revealed hepatocellular pattern liver function abnormality (aspartate aminotransferase (AST), 868 IU/L; alanine aminotransferase (ALT) 482 IU/L; alkaline phosphatase, 231 IU/L) with normal prothrombin time and bilirubin levels. Etiological evaluation of potential causes of liver injury were negative, which suggested an instance of liver enzyme producing HCC. Despite his preserved liver function, TACE was deemed risky for the reduction of intrahepatic tumor due to the initial significant tumor burden and combined portal vein thrombosis. The patient therefore underwent transarterial chemolipiodolization for the left lobe daughter nodules and subsequently received TARE for the right lobe main mass (Figure 2). Post-TARE liver function test showed a markedly elevated level of liver enzymes (AST, 4237 IU/mL; ALT, 1529 IU/mL), whereas the patient was free from associated symptoms. The patient then received palliative radiotherapy for his scapular metastasis, and continued 1st line atezolizumab and bevacizumab combination therapy, during which he maintained partial response. Liver enzyme levels were normalized in serial follow-up tests, in correspondence with decreased tumor size on imaging (Figure 3, 4).

Conclusion: We present a case of an advanced-stage HCC patient with highly elevated liver enzymes, which were normalized along with decreased tumor burden following TARE.

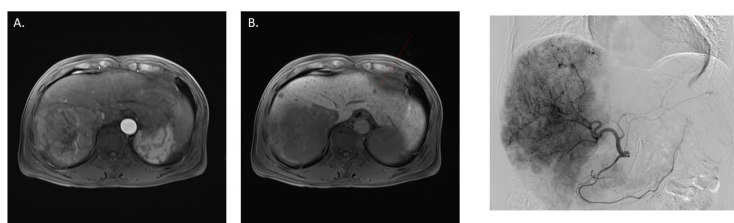


Figure 1. Initial liver magnetic resonance image findings. Right lobe dominant HCC with enhancement on arterial phase (A) and washout on portal phase (B).

Figure 2. Hepatic angiography of huge right lobe HCC. Selective TARE of right anterior HA and right posterior HA. TARE: transarterial radioembolization; HA: hepatic artery

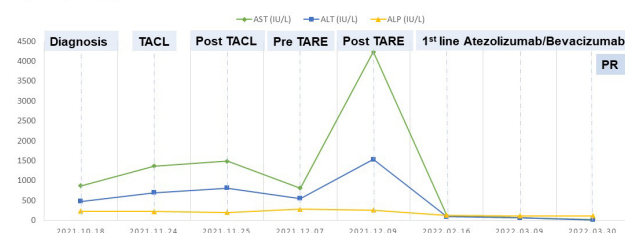


Figure 3. Change in liver enzyme levels during the patient's clinical course from diagnosis to atezolizumab and bevacizumab combination therapy.

AST: aspartate aminotransferase; ALT: alanine aminotransferase; ALP: alkaline phosphatase

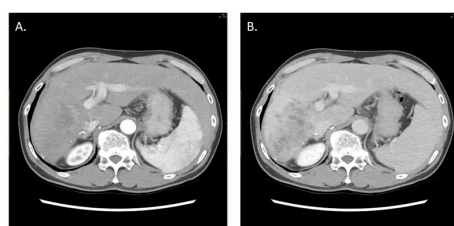


Figure 4. Follow-up liver dynamic CT scan after 2 cycles of atezolizumab and bevacizumab. Imaging shows decreased tumor size with enhancement on arterial phase (A) and washout on portal phase (B).