https://doi.org/10.22516/25007440.1304

Case report

Advanced Hepatocellular Carcinoma: Benefits of Atezolizumab and Bevacizumab in Clinical Practice. Case Report

Erick Andrés Cantor-Rizo,[1] Andrés Felipe Bejarano-Ramírez,[2*] Zamira Fernanda Gómez-Giraldo,[2] John Alejandro Murillo-Silva,[2] Henry Alexander Vargas-Díaz,[3] Mónica Lorena Tapias-Mantilla.[4]

OPEN ACCESS

Citation:
Cantor-Rizo EA, Bejarano-Ramírez AF, Gómez-Giraldo ZF, Murillo-Silva JA, Vargas-Díaz HA, Tapias-Mantilla ML. Advanced Hepatocellular Carcinoma: Benefits of Atezolizumab and Bevacizumab in Clinical Practice. Case Report. Revista. colomb. Gastroenterol. 2025;40(4):497-501. https://doi.org/10.22516/25007440.1304

[1] Internist, Clinical Hemato-Oncologist, Hospital Universitario Fundación Santa Fe de Bogotá. Bogotá, Colombia.
[2] General Practitioner, Hospital Universitario Fundación Santa Fe de Bogotá. Bogotá, Colombia.
[3] Internist, Clinical Oncologist, Hospital Universitario Fundación Santa Fe de Bogotá. Bogotá, Colombia.
[4] Internist, Hepatologist, Hospital Universitario Fundación Santa Fe de Bogotá. Bogotá, Colombia.

***Correspondence**: Andrés Felipe Bejarano-Ramírez.
abejaranomd@outlook.com

Received: 22/11/2024
Accepted: 30/05/2025

Abstract

Background: Hepatocellular carcinoma (HCC), originating from hepatocytes, ranks as the sixth most common cancer worldwide and the fourth leading cause of cancer-related mortality. Treatment options include surgical resection, locoregional therapies, systemic therapy, and liver transplantation, depending on disease stage. **Case report:** We describe a 78-year-old male with multiple comorbidities diagnosed with stage IIIB hepatocellular carcinoma according to the BCLC B classification. He was treated with atezolizumab and bevacizumab, achieving a favorable response with tumor marker negativization and stable disease. **Discussion:** Since 2008, HCC treatment has undergone substantial progress. Earlier systemic therapies such as sorafenib and lenvatinib offered response rates around 24% and overall survival of up to 13 months. Current therapies have demonstrated significantly improved outcomes. Notably, the phase III IMbrave150 trial (2020) showed the advantages of combining immunotherapy with antiangiogenic agents over sorafenib in patients with advanced HCC, with overall survival reaching up to 89%.

Keywords

Hepatocellular carcinoma, immunotherapy, tyrosine kinase inhibitors.

INTRODUCTION

Hepatocellular carcinoma is the fourth most common cause of cancer-related death worldwide and is among the five most frequent malignant neoplasms globally. More than 80% of primary liver cancers are caused by hepatocellular carcinoma, which arises from the parenchymal cells of the liver (hepatocytes)[1,2].

It is estimated that in Colombia there are two cases per 100,000 people. Alcohol consumption, cirrhosis, and hepatitis (B-C) are the main risk factors. With a ratio of 2.8:1, men are more likely than women to develop this disease. The five-year survival rate is approximately 18%[1,3].

Initial treatment focuses on a variety of options, including liver transplantation, surgical resection, and local ablation. Patients in the intermediate stage are treated with chemoembolization and other locoregional therapies[3–5]. Tyrosine kinase inhibitors have historically been used in advanced stages, with only modest improvements in overall survival and objective response rates[1]. The benefits of immunotherapy over management with tyrosine kinase inhibitors have been demonstrated; consequently, monotherapy and combination regimens including these agents are becoming increasingly prevalent[1]. We present the case of a patient with stage IIIB hepatocellular carcinoma treated with atezolizumab and bevacizumab.

CASE PRESENTATION

A 78-year-old male patient with a medical history of obesity, type 2 diabetes *mellitus*, hypertension, hypothyroidism, dyslipidemia, vitiligo, and autoimmune gastritis. A routine abdominal ultrasound performed on September 25, 2021, revealed a heterogeneous hyperechoic mass with lobulated, well-defined contours involving segments VI and VII of the right hepatic lobe, with peripheral flow. Color Doppler examination showed an image suggestive of a central scar, exerting significant local compressive effect by medially and superiorly displacing the suprahepatic veins, portal vein, and hepatic artery without compressing it.

Following these findings, an abdominal magnetic resonance imaging (MRI) study was performed on October 7, 2021, confirming the presence of a solid mass with heterogeneous content in segments VII and VIII of the right hepatic lobe, measuring 17 × 11 cm in axial diameter, located in a morphologically normal liver, without signs of cirrhosis, steatosis, or stigmata of chronic liver disease. The lesion exhibited a heterogeneous enhancement pattern after contrast administration. Increased focal uptake was observed in the right hepatic lobe, corresponding to segment 6/7, with no evidence of other hypermetabolic foci (**Figure 1**).

A percutaneous liver biopsy was performed on October 14, 2021, confirming the diagnosis of well-differentiated hepatocellular carcinoma, with a nuclear grade of 1–2, classified as stage B (intermediate) according to the Barcelona Clinic Liver Cancer (BCLC) system. A Child-Pugh score of A5 and a MELD score of 8 were reported; these were used as tools to assess liver function rather than as indicators of cirrhosis, since imaging showed no signs of chronic liver disease. At that time, the patient had an optimal functional status, with ECOG 0, a Karnofsky performance status of 100%, and an alpha-fetoprotein (AFP) level of 4.22 ng/mL.

A multidisciplinary evaluation, in collaboration with the hepatobiliary surgery service, determined that although the patient had a single lesion and was classified as BCLC stage B, his clinical condition of multimorbidity, together with the inherent risks of any locoregional intervention, meant that the procedural risk could potentially outweigh the expected benefits. In this context, and despite not meeting criteria for tumor progression (BCLC C), a systemic approach was chosen based on the patient's individual characteristics, prioritizing clinical safety. In accordance with the findings of the IMbrave150 study[6], systemic treatment with intravenous atezolizumab 1,200 mg plus intravenous bevacizumab 400 mg every three weeks was initiated. Treatment began on November 9, 2021.

Two follow-up abdominal computed tomography scans performed in January and April 2022 showed no radiological progression of the hepatic lesion, with no evidence of tumor size increase or the appearance of associated complications such as vascular thrombosis or new lesions. This allowed continuation of the same treatment under criteria of clinical and radiological stability, until toxicity or intole-

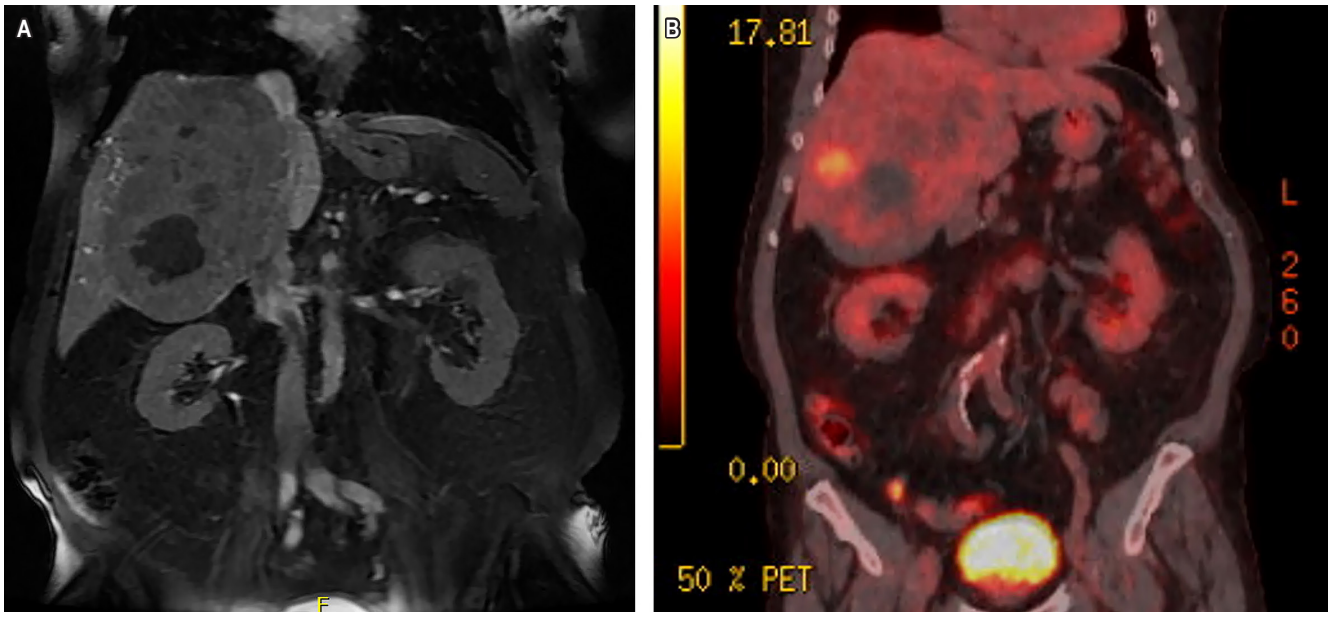


Figure 1. A. Magnetic resonance imaging (MRI): presence of a solid mass with heterogeneous content in segments VII and VIII of the right hepatic lobe. **B.** Positron emission tomography (PET): increased focal uptake observed in the right hepatic lobe, corresponding to segment 6/7. Author's file.

rance developed (**Figure 2**). Additionally, follow-up AFP levels measured in June and December 2022 showed fluctuations within the normal range, with a downward trend compared with the initial value. Although this was not considered normalization (as AFP was already normal in early phases of follow-up), it was interpreted as an indirect marker of favorable evolution under systemic therapy, supporting the decision to maintain the established regimen.

In November 2022, after the 18th treatment cycle, a follow-up positron emission tomography (PET) scan was performed, revealing a stable hypermetabolic malignant lesion, with no evidence of progression (**Figure 3**).

The patient remained clinically stable in February and March 2023. A new MRI performed during this period (**Figure 4**) demonstrated stability in the size of the hepatic lesion, with no evidence of progression or the development of complications such as thrombosis or new lesions, supporting continuation of treatment. Routine laboratory tests also revealed AFP levels persistently within the normal range, which, together with radiological stability, was interpreted as a positive response to the current treatment.

The patient continued to receive therapy at Fundación Santa Fe de Bogotá in August 2023, after completing 31 treatment cycles and 21 months of therapy. No immunotherapy-related adverse effects were reported that required dose reduction or modification. Since February 2023, the disease has remained stable, and immune response and tumor markers have shown negative results.

DISCUSSION

Previously, treatment options for patients diagnosed with advanced or incurable hepatocellular carcinoma were limited. Palliative systemic chemotherapy did not provide sufficient benefit to outweigh the associated toxicity and subsequent complications, particularly given the chemoresistance of these tumors. Sorafenib and lenvatinib, two of the first treatments to demonstrate some improvement in overall survival and objective responses since 2008, have yielded overall response rates of 24% and survivals ranging from 12 to 13 months[7,8]. Since then, the management of hepatocellular carcinoma has advanced, with encouraging results. These include the use of monotherapies and combination regimens such as tyrosine kinase inhibitors, antiangiogenic agents, and immunotherapy.

The randomized phase III IMbrave-150 clinical trial demonstrated the advantages of immunotherapy plus antiangiogenic agents over sorafenib as systemic treatment for individuals with advanced hepatocellular carcinoma in 2020. With a median follow-up of 6.8 months, the combination of atezolizumab plus bevacizumab showed overall survival at 6 and 12 months of 84.8% (95% CI: 80.9–88.7) and 67.2% (95% CI: 61.3–73.1), respectively, compared with 72.2% (95% CI: 65.1–79.4) and 54.6% (95% CI: 45.2–64.0) in the sorafenib group. Compared with the sorafenib group (37.2%), the atezolizumab plus bevacizumab group (54.3%) had significantly longer progression-

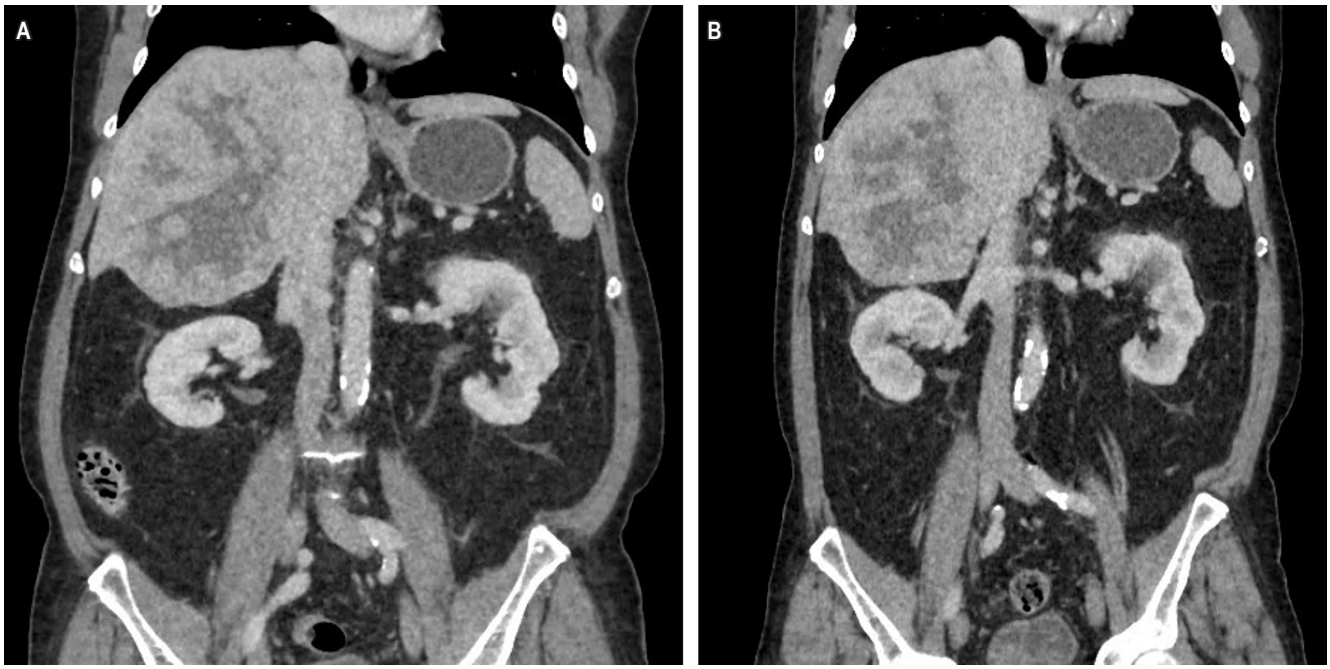


Figure 2. Coronal-section computed tomography in January 2022 (**A**) and April 2022 (**B**). Author's file.

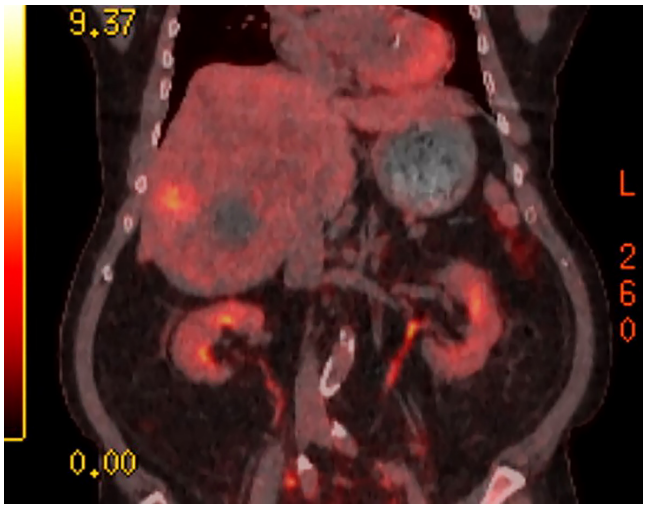


Figure 3. Positron emission tomography (PET) performed in November 2022 as part of follow-up, showing a stable hypermetabolic malignant lesion, with no signs of progression. Author's file.

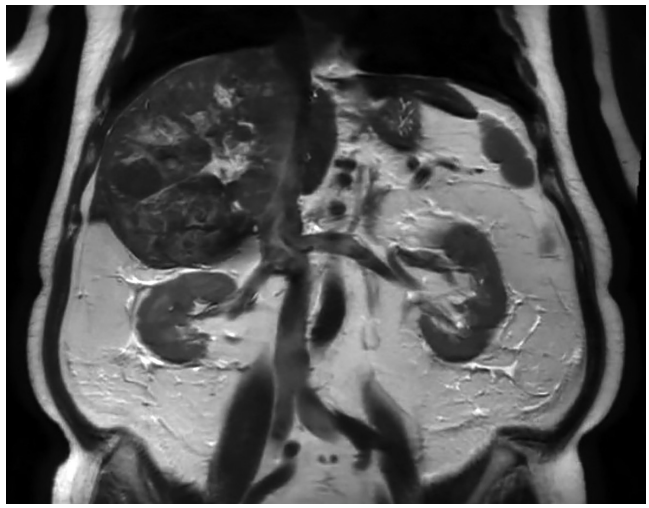


Figure 4. March 2023: magnetic resonance imaging showing no evidence of tumor growth or the development of complications. Author's file.

free survival at six months. In addition, objective response rates showed a marked advantage with the IMbrave-150 combination compared with sorafenib (89% vs. 19%)[6]. Moreover, the updated follow-up reported in 2022 in the Journal of Hepatology showed a median overall survival of 19.2 months, with a 95% CI of 17–23.7 months[9].

In our case, at the time of diagnosis the patient presented with a single lesion. However, his clinical condition, characterized by multimorbidity, together with the inherent risks of any intervention, meant that the procedural risk outweighed the expected benefits. For this reason, surgical management and locoregional therapy were not feasible. After a risk-benefit assessment, the most appropriate first-line treatment was considered to be the regimen with bevacizumab and atezolizumab. In addition to demonstrating good treatment tolerance, with no need for dose adjustments or treatment discontinuations due to toxicity, the patient showed a partial response, with a significant reduction in lesion size, improvement in systemic symptoms, and persistently negative tumor marker levels during follow-up.

At present, the patient continues under regular follow-up and, based on medical history and physical examination, remains asymptomatic, with adequate nutritional status, weight recovery, good quality of life, and maintenance of the response achieved for more than 18 months since treatment initiation, reinforcing the benefit of combined immunotherapy and antiangiogenic therapy.

Conflict of Interest

The authors declare no conflicts of interest.

Funding Sources

The authors received no funding for the research and preparation of this article.

Consent for Publication

Written informed consent for the publication of this manuscript was obtained from the patient.

REFERENCES

1. Chidambaranathan-Reghupaty S, Fisher PB, Sarkar D. Hepatocellular carcinoma (HCC): Epidemiology, etiology and molecular classification. Adv Cancer Res. 2021;149:1-61. https://doi.org/10.1016/bs.acr.2020.10.001

2. Yang JD, Hainaut P, Gores GJ, Amadou A, Plymoth A, Roberts LR. A global view of hepatocellular carcinoma: trends, risk, prevention and management. Nat Rev Gastroenterol Hepatol. 2019;16(10):589-604. https://doi.org/10.1038/s41575-019-0186-y

3. Vogel A, Meyer T, Sapisochin G, Salem R, Saborowski A. Hepatocellular carcinoma. Lancet (London). 2022;400(10360):1345-62. https://doi.org/10.1016/S0140-6736(22)01200-4
4. Ganesan P, Kulik LM. Hepatocellular Carcinoma: New Developments. Clin Liver Dis. 2023;27(1):85-102. https://doi.org/10.1016/j.cld.2022.08.004
5. Sim HW, Knox J. Hepatocellular carcinoma in the era of immunotherapy. Curr Probl Cancer. 2018;42(1):40-8. https://doi.org/10.1016/j.currproblcancer.2017.10.007
6. Finn RS, Ducreux M, Qin S, Galle PR, Zhu AX, Ikeda M, et al. IMbrave150: A randomized phase III study of 1L atezolizumab plus bevacizumab vs sorafenib in locally advanced or metastatic hepatocellular carcinoma. J Clin Oncol 2018;36(15_suppl):TPS4141-TPS4141. https://doi.org/10.1200/JCO.2018.36.15_suppl.TPS4141
7. Vogel A, Qin S, Kudo M, Su Y, Hudgens S, Yamashita T, et al. Lenvatinib versus sorafenib for first-line treatment of unresectable hepatocellular carcinoma: Patient-reported outcomes from a randomised, open-label, non-inferiority, phase 3 trial. Lancet Gastroenterol Hepatol. 2021;6(8):649-58.
8. Yamashita T, Kudo M, Ikeda K, Izumi N, Tateishi R, Ikeda M, et al. REFLECT-a phase 3 trial comparing efficacy and safety of lenvatinib to sorafenib for the treatment of unresectable hepatocellular carcinoma: an analysis of Japanese subset. J Gastroenterol. 2020;55(1):113-22. https://doi.org/10.1007/s00535-019-01642-1
9. Cheng AL, Qin S, Ikeda M, Galle PR, Ducreux M, Kim TY. Updated efficacy and safety data from IMbrave150: Atezolizumab plus bevacizumab vs. sorafenib for unresectable hepatocellular carcinoma. J Hepatol. 2022;76(4):862-73. https://doi.org/10.1016/j.jhep.2021.11.030