Title: Therapeutic Advances in Hepatocellular Carcinoma with Tyrosine Kinase Inhibitors

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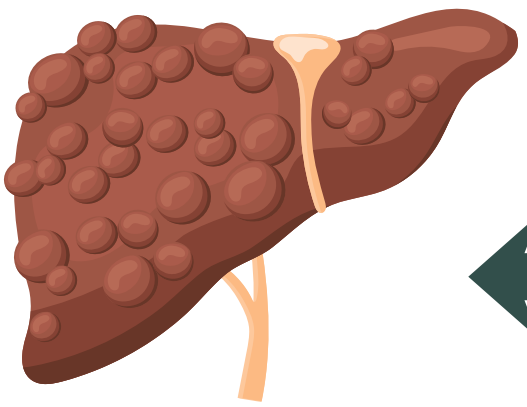
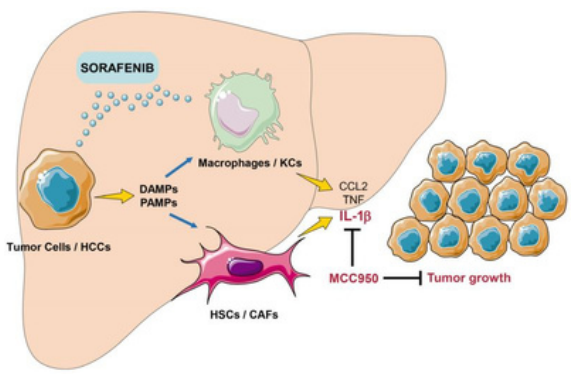
BACKGROUND

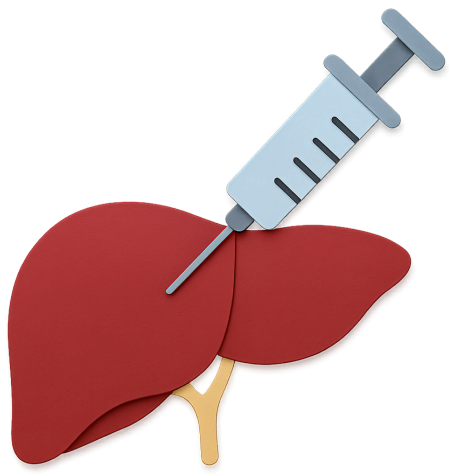
Hepatocellular carcinoma (HCC) remains a leading cause of cancer mortality, with tyrosine kinase inhibitors (TKIs) emerging as key therapies to improve survival in advanced stages. Recent trials explore novel TKIs and combinations to overcome resistance.

RESULTS

The IMbrave150 trial (2020, 2023 update) showed atezolizumab plus bevacizumab improved OS (19.2 vs. 13.4 months) over sorafenib. The HIMALAYA trial (2022) reported durvalumab plus tremelimumab achieved 16.4-month OS in unresectable HCC. A 2024 real-world study (Asia-Pacific HCC Registry) confirmed lenvatinib's PFS benefit (6.9 months) in 70% of patients, though hypertension (25%) required dose adjustments. Cabozantinib in the CELESTIAL trial (2021) extended OS to 10.2 months in second-line settings. Novel TKI-immune combinations showed 20% response rates in early trials.







METHODOLOGY

We reviewed 2020-2025 literature from PubMed, ESMO, and AASLD databases, focusing on phase II/III trials and real-world studies of TKIs in advanced HCC. Studies reporting overall survival (OS), progression-free survival (PFS), and adverse events were prioritized.

CONCLUSION

TKIs, particularly in combination with immunotherapy, significantly enhance HCC outcomes. Optimizing toxicity management and biomarker-driven approaches are key to future success.