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Local-Regional Treatment of Hepatocellular Carcinoma: A Primer for Radiologists

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Abstract

The treatment planning for patients with hepatocellular carcinoma (HCC) relies predominantly on tumor burden, clinical performance, and liver function test results. Curative treatments such as resection, liver transplantation, and ablative therapies of small lesions should be considered for all patients with HCC. However, many patients are ineligible for these treatments owing to advanced disease stage and comorbidities. Despite efforts to increase screening, early-stage HCC remains difficult to diagnose, which decreases the possibility of curative therapies. In this context, local-regional treatment of HCC is accepted as a form of curative therapy in selected patients with early-stage disease, as a therapeutic option in patients who are not eligible to undergo curative therapies, as a downstaging approach to decrease tumor size toward meeting the criteria for liver transplantation, and as a bridging therapy to avoid tumor growth while the patient is on the waiting list for liver transplantation. The authors review the indications, types, mechanism of action, and possible complications of local-regional treatment, as well as the expected postprocedural imaging features of HCC. Furthermore, they discuss the role of imaging in pre- and postprocedural settings, provide guidance on how to assess treatment response, and review the current limitations of imaging assessment. Finally, the authors summarize the potential future directions with imaging tools that may add value to contemporary practice at response assessment and imaging biomarkers for patient selection, treatment response, and prognosis. ©RSNA, 2022.

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