

Abstract Title

Combination Therapies in the Management of Large (≥ 5 cm) Hepatocellular Carcinoma: Microwave Ablation Immediately Followed by Transarterial Chemoembolization

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BACKGROUND: Transarterial chemoembolization (TACE) is a clinically preferred palliative treatment for patients with unresectable hepatocellular carcinoma (HCC). However, for large-size HCC ≥ 5 cm in diameter, serial TACE becomes challenging, and the benefits remain controversial due to the large tumor burden and increased possibility of complications. Improved tumor response and survival is reported when TACE is combined with ablative methods. Compared with radiofrequency ablation (RFA), microwave ablation (MWA) technology has a number of advantages, including shorter ablation time, wider ablation area, the ability to simultaneously perform multiple-probe ablations and a relatively high percentage of complete tumor necrosis. However, relatively few results are available regarding the combination of MWA and TACE in HCC treatment.

HYPOTHESIS: Because complete ablation for large HCC with a diameter ≥ 5 cm was rarely achieved by MWA alone. We introduced MWA as tumor debulking procedure with the purpose of reducing tumor burden. TACE was subsequently performed to treat the residual tumor after MWA. Here, we retrospectively assessed the short-term safety and efficacy of MWA immediately followed by TACE for large HCC.

METHODS: From March 2013 and January 2015, 66 patients (54 males and 12 females; mean age 54 years, range, 29-83 years) with 72 large-size HCC lesions were included in this study. A total of 18 (27.3%) patients were staged as Barcelona Clinic Liver Cancer class B, and 48 (72.7%) patients were considered class C. Seventy-eight percent (52/66) of patients had a hepatitis B virus infection. The tumor size was 9.0 ± 3.9 cm, ranging from 5 to 19 cm. MWA was performed under ultrasound guidance immediately followed by TACE. Local tumor response, progression-free survival (PFS) and overall survival (OS) were analyzed according to modified Response Evaluation Criteria in Solid Tumors. Procedure-related complications were also assessed according to the Society of Interventional Radiology Clinical Practice Guidelines.

RESULTS: The technique was successfully performed in all of the patients. Complete response (CR) was achieved in 28 cases and partial response (PR) was achieved in 34 cases one month after the procedure. The objective response rate (CR+PR) was 93.9%. The median PFS and OS time were 9 months and 21 months. The 6-, 12- and 18-month OS rates were 93.9%, 85.3% and 66.6%, respectively. A hemorrhage was detected in 3 patients and arteriovenous fistula in 2 after MWA, and it was promptly treated with embolization. There were no liver abscesses, bile duct injuries or other major procedure-related complications. MWA immediately followed by TACE is safe and effective for treating large-size HCC.