The tumor vascularity and lipiodol deposition predicts risk of disease progression after TACE in patients with unresectable HCC

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Aim/Background: Patients with BCLC stage B HCC are currently treated with transarterial chemoembolization (TACE) which uses intra-arterial infusion of lipiodol, along with a chemotherapeutic agent to selectively obstruct tumor vessels. Lipiodol retention and tumor vascularity have been suggested as factors impacting overall survival (OS) and time to progression (TTP) in patients with unresectable HCC who receive TACE. In this study, the prognostic value of tumor vascularity and lipiodol deposition as well as other risk factors on OS and TTP were evaluated in HCC patients.

Methods: HCC patients were grouped based on tumor vascularity and lipiodol deposition after TACE. Tumors were classified as hypervascular or hypovascular based on contrast enhancement on arterial phase baseline CT scans. Lipiodol deposition was evaluated using CT scans. There were 101 patients in the good blood supply group, and 73 patients in the poor lipiodol deposition group.

Results: Risk of disease progression increased with increased number of nodules and increased ECOG score. The progression-free rate was significantly higher in patients with good blood supply + good lipiodol deposition compared to those with good blood supply + poor lipiodol deposition. In patients with poor lipiodol deposition, risk of death was significantly increased in BCLC stage C compared to BCLC stage B patients, while risk of death was decreased with 1) increasing number of TACE procedures and 2) with every percent increase in degree of lipiodol deposition after the first TACE. Risk of disease progression in these patients was increased with increasing tumor size, and decreased with 1) increasing number of TACE procedures and 2) every percent increase in lipiodol deposition after the first TACE.

Conclusions: Both of tumor vascularity and lipiodol deposition should be considered as predictors of disease progression after TACE. These data have important implications for the clinical management of patients with unresectable HCC. Poor lipiodol retention may predict a poor TTP and OS despite the blood supply status.

Disclosure: All authors have declared no conflicts of interest.