Surg. Gastroenterol. Oncol. 2017;22(2):117-121 DOI: 10.21614/sgo-22-3-117

Lipiodol Uptake and Wash-out Rate Detection on Computed Tomography as Predictors for Tumor Recurrence in Hepatocellular Carcinoma Treated by Transcatheter Arterial Chemoembolization

Andreea-Elena Scheau[1], Cristian Scheau[2], Ioana Gabriela Lupescu[1,2]
[1]Department of Radiology, Medical Imaging and Interventional Radiology, Fundeni Clinical Institute "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania
[2]"Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

Abstract
Background: Transcatheter arterial chemoembolization (TACE) is a dedicated method for treating intermediate stage hepatocellular carcinoma (HCC). The Lipiodol used in conventional TACE presents the advantage of being easily visualized and quantified on Computed Tomography (CT).
Methods: Immediate postprocedural (baseline) and follow-up CT examinations of twenty patients treated by TACE for HCC were evaluated in this study. Lipiodol uptake on baseline images and progressive washout on follow-up examinations were assessed.
Results: Statistically significant lower baseline Lipiodol densities are found in patients that develop tumoral recurrence at some point on follow-up examinations (p=0.0280). Using the treated nodule density as a predictive factor for tumoral recurrence, we obtained a diagnostic sensitivity of 92.31% in patients with cut-off values ≤ 545.36 HU, albeit with a low specificity. All patients develop a quantifiable Lipiodol density decrease over time, regardless of tumoral recurrence implication (p=0.0298). There is evidence to suggest that specific Lipiodol accumulation patterns may be associated with a higher risk of tumor recurrence.
Conclusions: Baseline post-procedural Lipiodol accumulation levels may serve as a predictor for tumoral recurrence in patients treated for HCC using TACE, with good sensitivity provided a high cut-off value is set for the measured densities.
Key words: transcatheter arterial chemoembolization, hepatocellular carcinoma, Lipiodol, wash-out, surveillance, tumoral recurrence.