

## Magnetic Resonance Imaging Assessment of Metastatic Neuroendocrine Tumor Textural Changes after Liver Transarterial Chemoembolization

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### Abstract

Purpose – to identify MRI parameters suitable for assessment of metastatic neuroendocrine tumor (mNET) textural changes after liver transarterial chemoembolization (TACE) and their relationship with the progression-free survival.

Thirty one hepatic mNET patients undergone 61 TACE procedures were enrolled in the study. One hundred eight pairwise (pre- and post-TACE) MRI studies were analyzed. Before and after TACE we measured apparent diffusion coefficient (ADC) and its standard deviation (SD), MR contrast agent (MRCA) uptake dynamics and signal intensity (SI) SD on portal phase T1 WI in the tumor solid component.

The solid portions of target mNET demonstrate the following MRI changes after TACE: increase of ADC values ( $p = 0,002$ ) and its SD ( $p = 0,006$ ), decrease of MRCA accumulation on arterial ( $p = 0,016$ ) and portal ( $p = 0,004$ ) phases, increase of both MRCA wash-out time ( $p = 0,016$ ) and SI SD on portal phase T1-WI ( $p = 0,026$ ). The increase of ADC values and its SD and decrease in MRCA accumulation on portal phase were significantly associated with increase to progression free survival.

Assessment of MRI parameters (ADC and MRCA accumulation) reflecting NET textural changes after liver TACE may be useful for accurate prediction of time to disease progression and personalization of MRI follow-up schedule.

**Key words:** Transarterial Chemoembolization, Liver Metastases, Evaluation of Treatment Effect, Neuroendocrine Tumors.

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