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PII: S0899-7071(18)30041-X
DOI: doi:10.1016/j.clinimag.2018.02.010
Reference: JCT 8398

To appear in:

Received date: 4 June 2017
Revised date: 24 January 2018
Accepted date: 12 February 2018

Please cite this article as: Lu Shen, Guoxing Zhou, Tong Tong, Fei Tang, Yi Lin, Jie Zhou, Yibin Wang, Genlin Zong, Lei Zhang , ADC at 3.0 T as a noninvasive biomarker for preoperative prediction of Ki67 expression in invasive ductal carcinoma of breast. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Jct(2017), doi:10.1016/j.clinimag.2018.02.010

ADC at 3.0 T as a noninvasive biomarker for preoperative prediction of Ki67 expression in invasive ductal carcinoma of breast

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Abstract

Purpose: To investigate the role of apparent diffusion coefficient (ADC) as an imaging biomarker for invasive ductal carcinoma (IDC) in the breast.

Methods: Seventy-one patients undergoing 3.0 Tesla DWI were retrospectively enrolled. Correlations between the ADC values and prognostic factors were evaluated.

Results: Multivariate regression analyses showed that Ki67 expression and molecular subtype were independently associated with the ADC. Discriminant analysis excluded the ADC as a good biomarker for subtype, but the mean ADC significantly distinguished Ki67-positive (low ADC) from Ki67-negative (high ADC) lesions, as observed in the in ROC curves, with a diagnostic sensitivity of 1.00 and a cut-off value of 0.97×10^{-3} mm^2/s.