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4 - ABBREVIATED MRI PROTOCOL TO EVALUATE RESPONSE TO BREAST CANCER NEOADJUVANT CHEMOTHERAPY

Eduardo Carnier Dornelas[1], Linei Augusta Brolini Dellê Urban[2], Carolina de Lima Bolzon[3], Iris Rabinovich[3], Selene Elifio Esposito[1]

[1]Pontifícia Universidade Católica do Paraná – Curitiba (PR), Brazil.
[2]Diagnóstico Avançado por Imagem – Curitiba (PR), Brazil.
[3]Universidade Federal do Paraná – Curitiba (PR), Brazil.

Introduction: Abbreviated MRI protocols have been proposed to reduce examination time, patient discomfort, and costs for breast cancer screening. However, an abbreviated MRI protocol for assessing neoadjuvant chemotherapy in breast cancer is yet to be explored. ***Objective:*** We sought to develop an abbreviated MRI protocol to evaluate the response to neoadjuvant chemotherapy treatment for invasive breast cancer carcinoma with diagnostic performance equivalent to that of the full protocol. ***Methods:*** This was a retrospective, single-center, cross-sectional study. This study comprised 210 women diagnosed with invasive breast carcinoma of no special type who underwent breast MRI after neoadjuvant chemotherapy between 2016 and 2020 in Curitiba, PR, Brazil. Breast MRI scans were reevaluated, first with access only to axial 3D SPAIR without contrast and first post-contrast time (two sequences); next to the second post-contrast time (three sequences); then to the third post-contrast time (four sequences); and finally, to the full protocol (seven sequences). The diagnostic performance (sensitivity, specificity, positive predictive value, negative predictive value, and accuracy) of the three abbreviated protocols and the full protocol was analyzed using the Wilcoxon nonparametric test. ***Results:*** The median age of the study population was 47 years. The diagnostic performance of abbreviated protocols with three and four sequences and the full protocol was identical. The two-sequence abbreviated protocol showed higher specificity (84.6%), but a higher probability of false negatives (16.8%) and a lower sensitivity (83.2%) than the other protocols, which showed values of 81.3, 8.4, and 91.6%, respectively. The abbreviated protocol with three sequences showed an average underestimation of only 0.03 cm in the measurement of the longest axis of the residual lesion (p=0.008), but an average reduction in acquisition time of 75%. ***Conclusion:*** The three-sequence abbreviated MRI protocol showed diagnostic performance equivalent to the full protocol but with a 75% reduction in acquisition time.