Breast MRI as an adjunct to mammography: Does it really suffer from low specificity? A retrospective analysis stratified by mammographic BI-RADS classes.

Abstract:
Reports on the specificity of breast MRI are heterogeneous, depending on the respective setting of the performed study. To retrospectively estimate the sensitivity and especially the specificity of breast MRI in the non-screening setting as an adjunct to mammography sorted by breast density and to estimate the accuracy of breast MRI in cases rated BI-RADS 0 and 3 mammographically. A total of 216 consecutive patients with referral to breast MRI and previously acquired mammography were enrolled in this analysis. Negative findings were followed up with a mean time of 26.7 months. The loss to follow-up was 10.8%. The single breast was regarded as the study subject (n=399, 364 cases were eligible for calculation of diagnostic accuracy). BI-RADS 1 and 2 were rated as benign, 4 and 5 as malignant. BI-RADS 0 and 3 were analyzed separately. The 95% confidence intervals (CIs) were calculated from the normally approximated binomial distribution and taken to represent significant differences for the two imaging modalities if they did not overlap. Among the study population, 62 malignant neoplasms were detected. For cases rated BI-RADS 1, 2, 4, and 5 (n=251), the sensitivity of breast MRI was 95.7% (95% CI 89.9-100.0%) and 74.5% (95% CI 62.0-87.0%) for mammography, respectively. The specificity of breast MRI was 96.1% (95% CI 93.4-98.8%).
and 92.2% (95% CI 88.5-95.9%) for mammography, respectively. The diagnostic accuracy of breast MRI did not depend on breast density. In cases rated BI-RADS 0, n=57 (3, n=56), breast MRI achieved a sensitivity of 100% (90.9%) and a specificity of 98.1% (88.9%). There was a significant (P< 0.01) accumulation of dense breast tissue (ACR IV) in breasts rated BI-RADS 0 in mammography. Breast MRI missed three malignant lesions, two of them being smaller than 3 mm.There is no rationale to criticize the low specificity of breast MRI when used as an adjunct to mammography. The independency of the diagnostic accuracy of breast MRI from breast density makes it a worthwhile choice in mammographic BI-RADS 0 cases.