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Mammographic Breast Density: Its role in tumor size assessment with imaging techniques

Izquierdo M

Dexeus University Hospital, Spain

Aim: To study the visual and automatic measurement of mammographic breast density (MBD) and its implications in tumor size assessment using distinct imaging techniques.

Methods: Study of the visual and automatic measurement of mammographic breast density according to the breast imaging data system (BI-RADS) in 212 patients with invasive unifocal breast cancer, excluding microinvasive lesions, who did not receive neoadjuvant chemotherapy. Tumor size assessment was compared using a linear regression according pathologic size with mammographic, US and MR size. The influence of MBD in each technique of pathologic size was seen by Bland-Altman plot.

Results: Patient's mean age was 55,7±9.9 year-old. The mean size of the lesion established by mammography was 16.8± 10.4 (4 -70) mm, by US was 13.6±7.2 (5 – 55) mm and by MR 17.2 ±9.9 (5 – 66) mm. Mean pathologic size was 12.6 ±8.1 (0.3 – 55) mm. Automatic MBD mean was 25.2±16.78. BIRAD assessment with visual and automatic MBD measurements were correlated with a tendency of tumor size overestimation with visual method. Linear regression of tumor size according image techniques with pathologic size showed an adjusted r-square of 27.3% for mammography 41.8% for US and 51.7% for MR. The best correlation was seen with MR although has a tendency to overestimate tumor size. Only tumor size assessed by mammography was influenced by MBD. With this technique, tumor size was best adjusted for those breasts with lower MBD.

Conclusion: Visual measurement overestimates MBD versus automatic measurement according BIRADS categories. MR is the more accurate breast imaging technique for assessing tumor size independently of the BMD which only influences in the mammographic tumor size estimation.

Biography

Maxim Izquierdo is an expert in the Breast Disease committee of Dexeus University Hospital, Barcelona. He has presented his news in the Gallen International BCC; European Breast Cancer Conference; ASCO; and World Congress of Senologic .International Society, He is member of Sociedad Española Senologia Patologia Mamaria.

maxizq@dexeus.com

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