

08:00–18:00 Automatic Quantitative Assessment of Volumetric Breast Density in Korean Women (or Asian Women)

08:00–18:00 [SE 02 BR–38] Breast

**Speaker** **Minseo Bang** (Asan Medical Center)

**Authors** Minseo Bang, Hak Hee Kim, Joo Hee Cha, Hee Jung Shin, Eun Young Chae

**Affiliation** Asan Medical Center

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## PURPOSE:

Mammographic breast density is associated with increased risk of breast cancer and is inversely correlated with the accuracy of mammography. Breast density measurement conveys information about breast cancer risk. Automatic measurement of volumetric breast density using Volpara (version 1.5, Matakina) would be an objective and reproducible way to standardize breast density assessment. Our purpose was to determine the normal range of volumetric breast density parameters obtained using automatic density measurement software in Korean women.

## MATERIALS AND METHODS:

From June 2011 to January 2013, 27,576 normal screening mammograms were performed in 7054 screening women (mean age, 50.1 years; range, 22–87 years) using GE Senographe machines. We obtained three parameters of volumetric breast density using automatic breast density measurement software (Volpara) as follows: fibroglandular tissue volume (FGV), total breast volume (TBV), and volumetric breast density (VBD). Statistical analysis was performed using SAS program to obtain normal ranges of three parameters associated with volumetric breast density. Pearson's correlation was used to estimate the associations between age, BMI, and volumetric breast density parameters.

## RESULTS:

Mean age and body mass index (BMI) were 50.1 years old (range, 22–88 years) and 22.4 (range, ~41.4), respectively. Normal range of fibroglandular tissue volume and total breast volume on CC view ranged from 55.3 to 56.1 cm<sup>3</sup> and 426.9 to 432.2 cm<sup>3</sup>, respectively. On MLO view, they ranged from 54.0 to 54.7 cm<sup>3</sup> and 482.7 to 488.5 cm<sup>3</sup>. In addition, normal range of volumetric breast density on CC and MLO view was from 14.6 to 14.8% and from 12.4 to 12.6%, which were categorized as 4 and 3. VBD and FGV were negatively associated with age, whereas TBV was positively associated with age ( $p < 0.001$  for all three results). In addition, FGV and TBV were positively associated with BMI, whereas VBD was inversely correlated with BMI ( $p < 0.001$  for all three results).

## CONCLUSION:

Our results showed the normal range of quantitative breast density parameters obtained using an automatic breast density measurement software in Korean women. These results could help to assess breast cancer risk and to stratify the optimized screening protocol in Korean women according to breast density.