**Objectives:** Addition of elastography to routine breast sonography increases its specificity, especially in BIRADS 3 and 4 lesions. Tsukuba score, a qualitative elastography parameter, has been validated by several researchers. Elasticity index quantitatively evaluates solid lesions with higher values indicating harder lesions being more malignant. We evaluated the diagnostic performance of a strain elastography parameter ‘Elasticity Contrast Index’ (ECI) and compared it to Tsukuba score.

**Methods:** Prospective cross-sectional study. 52 solid breast lesions on routine sonography (7-12 MHz probe on Medison Acuvix A30 sonography machine), were evaluated and categorized according to the BIRADS system followed by elastography including ECI and Tsukuba elasticity scores (score from 1-5: 1 and 2 likely benign, 3-5 likely malignant). Independent t test was done to compare ECI in benign and malignant lesions. A cut off value of ECI was obtained with ROC analysis. The gold standard was final tissue diagnosis.

**Results:** Mean patient age: 33.6 years. Mean lesion size = 22x 14 mm. Benign: 71%, mostly fibroadenoma. Malignant: 29% most common ductal carcinoma. Mean ECI = 1.89 benign group and 3.19 malignant group, p value 0.003. Cutoff value of ECI = 2.74

Significant correlation (p value<0.001) between Tsukuba and ECI, with Pearson correlation = 0.72.

Number of false negatives higher with Tsukuba score 1 or 2 (10 cf. 5 with ECI value less than 2.74)

**Conclusions:** ECI has good sensitivity and higher specificity for differentiating solid breast lesions compared to Tsukuba score and can improve accuracy in lesion categorization. However, larger studies directly comparing the two can further illustrate advantage of ECI over Tsukuba.