

## **P209 Evaluating conventional pathological factors against the standardized 21-gene signature for hormone receptor positive breast cancer patients**

Predictive and prognostic factors

---

T. Onoda H. Yamauchi, H. Yagata, K. Tsugawa, K. Suzuki, S. Nakamura Breast Surgical Oncology, St. Luke's International Hospital, Tokyo, Breast Surgery, Yokohama Asahi Central General Hospital, Breast and Endocrine Surgery, St. Marianna School of Medicine, Kanagawa, Pa

**Goals:** Molecular genomic profiling now plays a major role in the treatment decisions for post-operative breast cancer patients. However, these analyses may incur additional financial costs towards Medical care. We compared the risk category between well-known prognostic tools and the 21-gene signature (Oncotype DX<sup>®</sup>, ODX), and explored whether the conventional pathological factors could substitute for the Recurrence Score (RS), as measured by ODX.

**Methods:** This study was conducted from October 2007 to October 2010. ODX was provided to 142 women diagnosed with hormone receptor-positive invasive breast cancer to assist with treatment decisions. The risk categories between ODX, the St.Gallen 2007 Guidelines (SG), and Adjuvant! Online (AOL) were compared. Next, the relationship between the RS and pathological factors (tumor size (T), lymph node metastasis (N), nuclear atypia (NA), mitotic counts (MC), nuclear grade (NG), lymphatic and vascular invasion (LI, VI), estrogen and progesterone receptor (ER, PgR), HER2 and Ki-67 were analyzed. Ki-67 was automatically counted by an Ariol-SL50 instrument. Spearman rank correlation coefficients and associated 95% confidence intervals were calculated.

**Results:** In 142 women, the ODX revealed 68 low (48%), 55 intermediate (39%), and 19 high risk patients (13%). SG revealed 14 low (10%), 123 intermediate (87%), and 5 high risk patients (3%). In the intermediate group indicated by SG, 56 cases (45%) were low risk by ODX. AOL found 49 low (35%), and 93 high risk patients (65%). The AOL 10-year recurrence risk was poorly correlated with RS ( $r_s = 0.26$ ). There were moderate positive correlations between the RS and NG ( $r_s=0.43$ ), MC ( $r_s=0.40$ ) and Ki-67 ( $r_s=0.43$ ), and a moderate negative correlation with PgR ( $r_s = ?0.55$ ). Correlations with T, N, NA, LI, VI, ER and HER2 were smaller ( $r_s$  from ?0.32 to 0.23).

**Conclusion:** This report demonstrated the inconsistency between ODX and conventional tools. The RS is moderately correlated with NG, PgR, MC and Ki-67, but none of these conventional pathological factors were equivalent to the RS.