P247 A laboratory comparison of the 21-gene assay and PAM50-ROR

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Goals: The 21-gene Recurrence Score® assay is validated in patients (pts) with ER+ early stage invasive breast cancer (EBC) and predicts 10-yr distant recurrence risk and chemotherapy (CT) benefit. The Prosigna® assay (ROR) which uses 46 of the PAM50 genes, was validated in post-menopausal pts with ER+ EBC and is a prognostic assay only. Despite differences in platforms and methods used for development and validation, it is frequently believed that the assay results are interchangeable. We performed a study comparing results from the two assays obtained from the same tumor blocks.

Methods: 70 sequential BC tumors from Marin Medical Laboratories with sufficient tumor material were selected to be tested with the standard 21-gene assay. Samples were sent to an independent lab where Prosigna ROR and intrinsic subtype analysis was performed with the operators blinded to Recurrence Score results. Descriptive statistics were used to compare results from the two assays.

Results: Of the 70 patients evaluated, 18 were excluded: 3 for low RNA signal in the Prosigna assay, 4 were ER(?) by RT-PCR, 6 were node-positive and 5 were pre-menopausal. Correlation between the two assays in the remaining 52 post-menopausal patients with node-negative disease was poor (Spearman correlation 0.08, 95%?CI ?0.20,?0.35). Risk group assignment (low/intermediate/high) between Recurrence Score and ROR was in agreement in 54% (28/52) with 4 of 7 high ROR scores having low Recurrence Score results. Prosigna classified 38 luminal A, 12 luminal B, 2 HER2 enriched and 0 basal. In both the luminal A and B groups there was a wide range of Recurrence Score results. Correlation in the overall population (including node positive and pre-menopausal women) was also poor (Spearman correlation 0.19, 95%?CI ?0.07, 0.4 [n?=?63]).

Conclusion: Consistent with prior comparisons between the Oncotype DX and other genomic assays, there are substantial differences in the way patients are risk stratified and it cannot be assumed that the assay results are interchangeable. These results suggest that there is only a modest agreement between Recurrence Score results and ROR, with almost half of N(?),?ER+ pts classified differently, including ?57% of high ROR pts being classified as low risk by the Recurrence Score with minimal if any benefit from chemotherapy expected.