

## FLASCO Abstracts

### Factors Associated with the Decision to Decline Chemotherapy in Patients with Early-Stage, ER+/HER2-ve Breast Cancer and High-Risk Scoring on Genomic Assays

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**Background:** The 21-gene Oncotype DX (ODX) assay predicts a risk of disease recurrence in patients with estrogen receptor (ER)-positive breast cancer (BC). MammaPrint (MP), on the other hand, is a 70-gene panel that predicts a risk of early metastasis. Patients with early-stage, ER+/HER2- BC but high risk as per ODX/MP should receive systemic therapy with chemotherapy followed by endocrine therapy versus endocrine therapy alone for optimal long-term outcomes. Despite evolving precision medicine practice, there remain patients who are reluctant to receive recommended treatments.

**Methods:** Using the *National Cancer Database* (2004-2017 dataset), we identified a cohort of patients with early-stage (AJCC clinical staging I-II), ER+/HER2- BC, a high-risk designation as per ODX (Recurrence Score >25) or MP, and documented data on use of chemotherapy. We explored significance of socio-demographic characteristics and either consent or refusal to undergo chemotherapy through bivariate chi-squared testing, followed by inclusion of significant variables ( $p<0.05$ ) in a multivariate logistic regression model.

**Results:** Of  $n=43,533$  early-stage, ER+/HER2- cases included in this study,  $n=38,606$  (88.7%) were considered high-risk as per ODX (Recurrence Score >25), while  $n=4,927$  (11.3%) were considered high-risk as per MP.  $N=4,415$  (10.1%) patients declined chemotherapy despite recommendations by the patient's physician. Significant predictors of refusal of recommended chemotherapy include: **1)** *elderly status* ( $>70$ ) compared to those aged  $<50$  (OR: 3.41, 95% CI: 2.96-3.92,  $p<0.001$ ); **2)** *race* as black compared to white (OR: 1.17, 95% CI: 1.05-1.29,  $p=0.004$ ); and **3)** *insurance status* as uninsured (OR: 1.65, 95% CI: 1.23-2.22,  $p=0.001$ ), Medicare (OR: 1.38, 95% CI: 1.21-1.59,  $p<0.001$ ), or Medicaid (OR: 1.64, 95% CI: 1.51-1.79,  $p<0.001$ ) versus private insurance. Ethnicity, Charlson/Deyo comorbidity scoring and setting (urban versus rural) were not significantly associated with patient consent or refusal of chemotherapy.

**Conclusions:** This large analysis suggests that social determinants of health play a role in patients' decision-making regarding recommended therapies. This provides an important context for clinicians to consider when tailoring medical education to patients of diverse sociodemographic backgrounds for best decision making.