

# Utility of the MammaPrint 70-gene and Blueprint 80-gene expression signatures in providing personalized treatment decisions in early-stage breast cancer and the role of the Oncology Nurse Navigator: A Case Study Approach



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### BACKGROUND

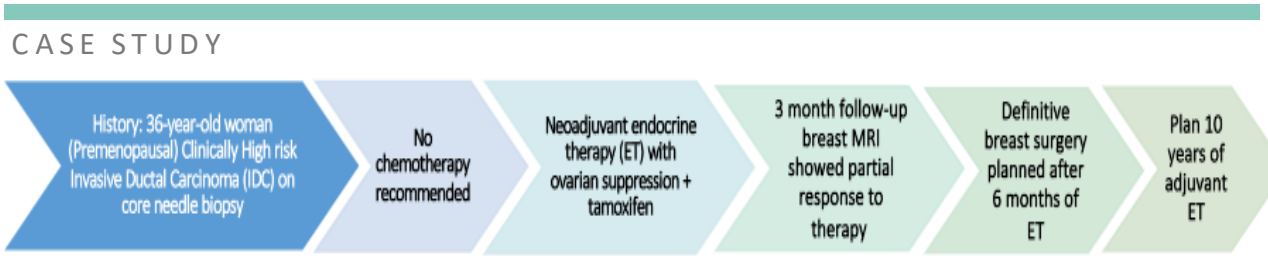
- Nurse navigators (NNs) are key players within the oncology care team who educate, advocate, and facilitate comprehensive care of their patients.
- MammaPrint assesses the risk of distant metastasis in early-stage breast cancer.
- Blueprint identifies the functional molecular pathways that drive tumor growth.
- Together, they provide valuable information that guides treatment decisions.

### METHODS

- A community-based clinic in the Southeast caring for breast cancer patients.
- The NN advocated for and facilitated the order for MammaPrint and Blueprint from the needle core biopsy.
- Clinical risk was determined by evaluating the tumor size, grade, estrogen- and progesterone-receptor (ER and PR), human epidermal growth factor receptor-2 (HER2), and lymph node status.
- MammaPrint, the 70-gene signature classifies tumors as UltraLow (+0.356 to +1.000), Low (+0.355 to +0.000), High1 (0.000 to -0.569) and High2 (-0.570 to -1.000).
- Blueprint, the 80-gene signature, further classifies tumors as Luminal, HER-2 type, or Basal. These classifications most accurately predict sensitivity to chemo- and endocrine therapy, pathologic complete response rates, and long-term outcomes.

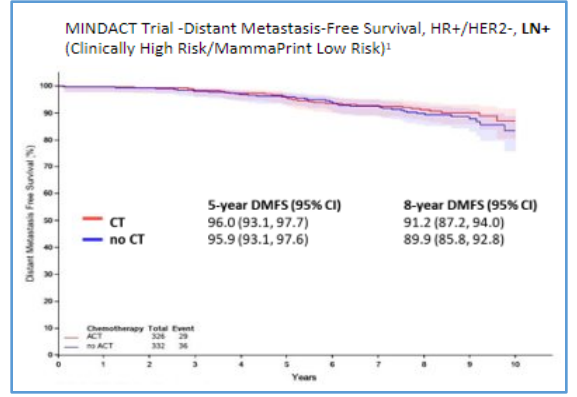
### OBJECTIVES

Through a case study approach, we aim to demonstrate how oncology NNs can utilize the gene expression signatures obtained by MammaPrint and Blueprint assays to guide their patients through treatment-related decision making at multiple points throughout their cancer journey.



### Clinical & Pathologic Features:

- Grade 2
- ER 67% / PR 45% / HER-2 negative (0)
- MammaPrint Index: +0.311
- Blueprint Classification: Luminal
- Axillary node biopsy positive



- In the MINDACT Trial 1/3 of all patients were < age 50
- Clinically high-risk / MammaPrint Low risk patients can safely forego chemotherapy
- Data to support neoadjuvant ET and extended therapy in premenopausal women is lacking

### CONCLUSIONS

- When considering clinicopathologic features alone, patients with clinically high-risk tumors are often recommended chemotherapy.
- The initial recommendation for neoadjuvant chemotherapy was adjusted after review of MammaPrint and Blueprint results, suggesting that this patient could safely forgo chemotherapy and receive endocrine therapy alone.
- Data to inform the care of young women is lacking. Genomic information supplemented clinicopathologic information and facilitated shared decision-making involving the NN in this challenging case.
- As key figures in a patient's cancer journey, NNs are poised to advocate for the use of decision-making tools that can further personalize care.
- The MammaPrint and Blueprint genomic assays increase the confidence in treatment decisions for patients and providers.
- Continuous education of NNs on genomic assays remains important to facilitate shared decision-making and improve timely care.

