Getting a Personalized Risk Assessment in Early Breast Cancer:

A Patient Journey

Precision Medicine

JANE FARMINGTON

Female, 55 years of age; married

Hypothetical Patient Case Study

Not an actual patient.

1 INITIAL PRESENTATION

Examination

PCP and surgical oncologist

Medical History

- Menarche: 12 years of age
- G:2 P:1
- Menopause: 52 years of age
- Gastrointestinal reflux disease

Family History

- Type 2 diabetes (father and mother)
- Breast cancer (maternal grandmother)

Current medications

- Omeprazole

Complaint and prior workup

- Felt mass on self-evaluation
- Referred for mammogram and surgical oncologist consult simultaneously
- Mammogram showed a large mass with spiculated margins in the left breast

Examination

- Large, palpable, hard immobile mass in the left breast; no skin involvement.

Next steps

- Core needle biopsy to establish preliminary diagnosis

2 BIOPSY

Ultrasound guided core needle biopsy

Surgical oncologist and Pathologist

Pertinent results

Histology

Type	Invasive ductal carcinoma
Grade	3
Size	3.7 cm in greatest dimension

Receptor status

ER	80%
PR	55%
HER2	IHC 1+

Preliminary diagnosis

- Stage IIA (T2, N0, M0)

Next steps

- Consultation with multidisciplinary team (MDT) to determine appropriate surgery (lumpectomy or mastectomy)

PATIENT CASE (CONTINUED)

3 SURGERY

Lumpectomy and sentinel lymph node biopsy
Surgical oncologist

Pertinent results

Tumor histology

Type	Invasive ductal carcinoma
Grade	3
Size	4.0 cm in diameter

Receptor status and biomarkers

ER	80%
PR	60%
HER2	IHC 0
Ki-67	19%

Lymph node

ITCs (0.1 mm in greatest dimension) detected in 1 regional lymph node

Diagnosis
- HR+/HER2-
- Stage IIA (T2, N0, M0)

Next steps
- Surgical oncologist orders gene expression profiling test

4 BIOMARKER TESTING

Gene expression profiling assay
External laboratory

Pertinent results

Recurrence

Score	17

Implication:
- Probability of distant recurrence at 9 years: 5%
- Probably of chemotherapy benefit: low

Next steps
- Medical oncologist uses risk calculator to further personalize risk assessment

5 PERSONALIZED RISK ASSESSMENT

Risk calculator
Medical oncologist

Pertinent results

Recurrence

Risk	High

Implication:
- Integration of GEP risk score and risk calculator results suggests higher risk of distant recurrence with low chemotherapy benefit

Diagnosis
- HR+/HER2-
- Stage IIA (T2, N0, M0)
- Risk of distant recurrence: >15%

What would you do next?

CLINICAL CONSIDERATIONS FOR TREATMENT DECISIONS IN EARLY HR+/HER2- BREAST CANCER

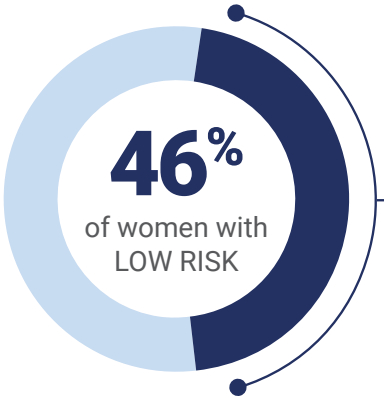
ASCO recommends the use of gene expression profile (GEP) assays to guide adjuvant therapy decisions[1]

However, GEPs may provide an incomplete picture of recurrence risk[2-6]

- GEPs may identify patients less likely to benefit from chemotherapy while underestimating the risk of distant recurrence[2]

Integrating tools that quantify clinicopathological factors with GEP provide a personalized risk assessment[2,7,8]

- An RWE study demonstrated that integrating a clinical-pathologic prognosis with GEP risk score **changed the prognosis** for[7]:



35.9% **reclassified** as **INTERMEDIATE RISK** (12-20% risk of distant recurrence)

10.1% **reclassified** as **HIGH RISK** (>20% risk of distant recurrence)

Original low-, intermediate-, and high-risk estimates were based on the original Oncotype DX® risk score definitions, where low risk is defined as having an RS<18, intermediate risk is defined as having an RS where 18≤RS≤30, and high risk is defined as having an RS≥31. Updated risk estimates were defined as the following: low (<12% risk), intermediate (12%-20% risk), and high (>20% risk).

Integrating clinical-pathologic features with GEP test results to get a more personalized recurrence risk estimate and improve shared decision making[2,7-9]

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Novartis Pharmaceuticals Corporation
East Hanover, New Jersey 07936-1080