Molecular Testing Strategies and their Impact on Treatment Decision in HR+/HER2- Metastatic Breast Cancer

EPH164

A Real-World Analysis from German Centers

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INTRODUCTION

Metastatic Breast Cancer (mBC)
remains a major clinical challenge, with treatment strategies increasingly guided by tumor biology and molecular characteristics. Among the molecular subtypes, **hormone receptor-positive/HER2-negative (HR+/HER2-) mBC** is the most prevalent[1], establishing endocrine therapy as the foundational treatment modality for this subgroup[2].

ESR1 Mutations
have emerged as **key biomarkers** of acquired **resistance to endocrine therapy** and play an important role in guiding the selection and optimization of targeted treatment strategies[3].

Real-World Data
on the implementation of **molecular testing strategies**, including timing, testing modality, and institutional practices, remain limited. This study provides evidence from German mBC-treating centers on molecular testing strategies and treatment decisions in routine clinical practice across different healthcare settings.

METHODS

A Health Care Structure Analysis (HCSA)
identified **595 relevant BC–treating centers** in Germany using the hospital quality reports published by the German Federal Joint Committee (G-BA) including:

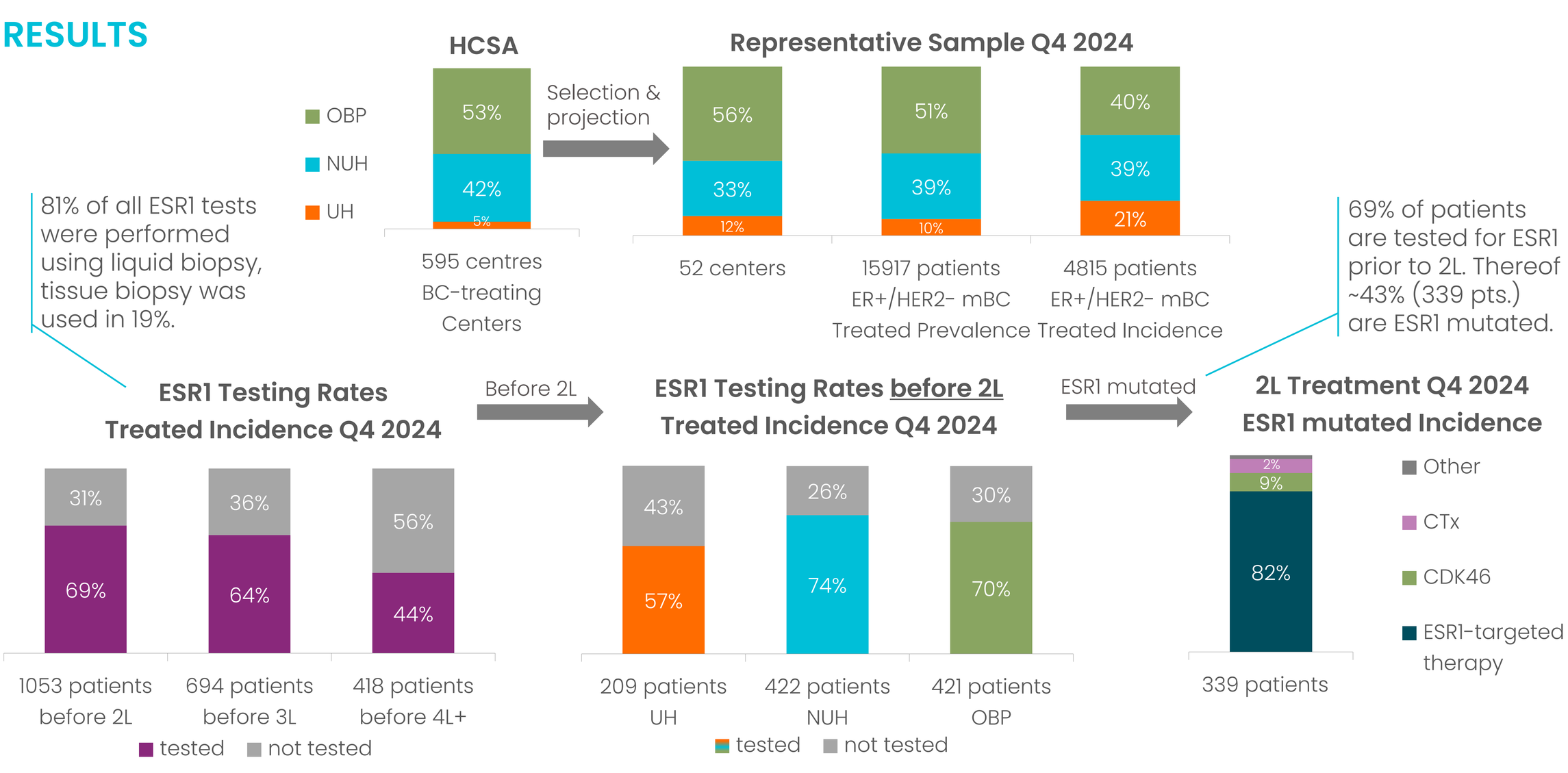
- Office-Based Practices (OBP)
- Non-University Hospitals (NUH)
- University Hospitals (UH)

Based on the distribution of these institution types, **institutional weightings** were derived to project center-specific treatment volumes to a national estimation of **treated incidence and prevalence**.

Aggregated Data
were collected from a **representative sample of 52 centers** covering patient counts within Q4 2024 on the following topics:

- Molecular testing rates and timing relative to treatment line
- Biopsy modality
- ESR1 mutation status
- Prescribed treatment

RESULTS



CONCLUSION

This real-world analysis highlights substantial **heterogeneity in ESR1 mutation testing practices** across German healthcare institutions.

While testing is most commonly performed before second- and third-line therapy, its underutilization in later lines may hinder optimal treatment sequencing, especially given the dynamic nature of ESR1 mutation status.

Despite widespread availability of liquid biopsy, **tissue biopsy remains in use**, suggesting potential barriers to broader adoption of less invasive methods.

Encouragingly, the majority of ESR1-mutated patients received targeted therapy. However, the **18% who did not** represent a missed opportunity for personalized care.

LIMITATIONS

Treatment decisions and ESR1 mutation status were collected only in **aggregated** form. To explicitly link individual mutation profiles with corresponding treatment pathways over time, longitudinal **patient-level data** would be required to fully contextualize treatment dynamics.

References
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3 Jeselsohn R, et al., ESR1 mutations—a mechanism for acquired endocrine resistance in breast cancer. Nat Rev Clin Oncol. 2015 Oct;12(10):573-83. doi: 10.1038/nrclinonc.2015.117. Epub 2015 Jun 30. PMID: 26122181; PMCID: PMC4911210.

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