# Patient Preferences for the Treatment of ER+/HER2-Metastatic Breast Cancer: A Discrete Choice Experiment

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# BACKGROUND

- Estrogen receptor positive and human epidermal growth factor receptor 2 negative (ER+/HER2-) breast cancer is the most frequently occurring type of breast cancer, in approximately 70% of all diagnosed breast cancers.<sup>1,2</sup>
- Nearly 30% of women with early-stage breast cancer will develop metastatic disease (mBC),<sup>3</sup> and 6–10% of all breast cancers in the United States were found to be mBC at diagnosis.<sup>4</sup>
- Endocrine therapy combined with a cyclin-dependent kinase 4/6 (CDK4/6) inhibitor is the first-line standard of care for ER+/HER2- mBC.<sup>5</sup> Novel therapies such as an oral selective estrogen receptor degrader (SERD) is approved for treatment following at least one line of endocrine therapy.<sup>6</sup>
- With expanding treatment options and evidence becoming available, understanding patient preferences for ER+/HER2- mBC treatments can help improve shared clinical decision making and quality of care in this population.<sup>7</sup>

# **RESULTS**

- Participant characteristics (Table 2)
  - A total of 165 participants completed the survey. Overall, participants had a mean age of 48 years, and 100% were female. The majority of participants were White (82%).
  - Participants had a mean mBC disease duration of 5 years at the time of the survey, and the majority (75%) had received ≥2 treatment regimens for mBC.
  - Of the 165 participants, 127 were tested for mutations and 72 of them (57%) reported having at least one of the following mutations: *ESR1*, PIK3CA, PTEN, or AKT.
- Relative importance of mBC treatment attributes (Figure 2)
  - The most important treatment attributes influencing patients' treatment decision were efficacy, defined as time on treatment while disease remains stable before worsening (45%), followed by the treatment being mutation-specific (15%).

# Figure 2. Relative importance ranking of mBC treatment attributes



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# **OBJECTIVES**

- To quantify the extent to which treatment attributes impact patient preferences for ER+/HER2- mBC treatments.
- To assess patients' perception of the impact of mBC and its treatments.
- The risk of rash (11%) was considered more important than the risk of severe diarrhea (8%), nausea (7%) and discontinuation due to side effects (7%).
- Patients' perception of the impact of mBC and its treatments (**Figure 3**)
  - Most participants (63%) agreed that infusion and injection treatments were larger reminders of mBC than oral treatments.
  - Fewer participants (39%) indicated that treatment frequency had an impact on their level of worry.

**Treatment Attribute** mBC, metastatic breast cancer

Figure 3. Patients' perception of the impact of mBC and

#### its treatment Completely disagree Somewhat disagree Neither agree nor disagree Somewhat agree Completely agree If I do not look sick, others will question my 17 8 21 26 27 diagnosis of metastatic breast cancer I am worried how the metastatic breast cancer has affected or can affect my relationships 33 32 I am worried about needing to switch treatment 15 34 41 for metastatic breast cancer I am worried that my treatment is not working 22 19 20 34 if I do not see a treatment side effect If I experience a side effect from the treatment 20 18 21 33 it means the treatment is working An injection or infusion treatment is a larger reminder of metastatic breast cancer than an **10** 7 21 28 35 oral treatmen Taking treatment for metastatic breast cancer 36 47 is a constant reminder of the disease

## **METHODS**

### Data source and study population

- An online discrete choice experiment (DCE) survey was conducted among adults with ER+/HER2- mBC in the US (03/25/2024 to 05/03/2024).
- Participants were recruited from an existing panel of patients in the US maintained by M3 Global Research, a well-established global data provider and market research firm.
- Participants were eligible if they resided in the US, were age ≥18 years at the time of the survey, had a self-reported diagnosis of ER+/HER2- mBC, and were willing and able to consent to being part of the study.

### Study design

The study contained both a qualitative and quantitative phase:

- Qualitative phase
  - A targeted literature review of published clinical trial data was conducted to identify an initial list of mBC treatment attributes and their associated levels.
  - The initial list of attributes and their levels were tested via 1:1 phone interviews with three eligible patients to ensure the relevance of the attributes to patients and clarity in descriptions for attributes and levels. The list of attributes and levels was updated and finalized based on the feedback received during the interviews and discussion with clinical experts (Table 1).

### Figure 1. Sample DCE choice card



- Quantitative phase
  - The DCE survey was developed based on the final list of treatment attributes and levels.
    - Participants' preferences for mBC treatments were collected using DCE choice cards (Figure 1).
    - Apart from DCE choice cards, the survey also included questions to assess respondents' demographic characteristics, disease and treatment characteristics, and perceptions of mBC and its treatments.
  - Prior to the online data collection, pre-tests were conducted with two eligible participants to ensure clarity and comprehensibility of survey content; questions were refined as needed.
  - The DCE survey did not collect any personal identifiable information; IRB exemption was received prior to data collection.
- Statistical analysis
  - Participant characteristics and perceptions of mBC and its treatments were summarized descriptively using means and standard deviations (SDs) for continuous variables and counts and percentages for categorical variables.
  - A mixed logistic regression model was used to estimate the preference weights and relative importance of treatment attributes.

#### Table 1. Attributes and levels of mBC treatments

Attributes	Levels

# Table 2. Participant demographic andclinical characteristics

Age (years), mean ± SD         47.6 ± 13.5           Race, * n (%)	Characteristics	All patients (N=165)
Race,* n (%)         136 (82.4)           White or Caucasian         136 (82.4)           Black or African American         18 (10.9)           Other         15 (9.0)           Not disclosed         2 (1.2)           Highest education level, n (%)         2           Less than high school         1 (0.6)           High school diploma or equivalent         25 (15.2)           Some college or Associate's degree         49 (29.7)           College graduate/Bachelor's degree and above         90 (54.5)           Breast cancer stage at initial diagnosis, n (%)         Stage 0-3           Stage 0-3         120 (72.7)           Stage 0-3         120 (72.7)           Stage 4         42 (25.5)           Not sure         3 (1.8)           Years since initial breast cancer diagnosis,* mean ± SD         4.9 ± 4.6           Selected mutations,ean (%)         ESR1           Selected mutations,ean (%)         ESR1           PIK3CA         39 (30.7)           PTEN         20 (15.7)           AKT         10 (7.9)           Tested but above mutations were not found         55 (43.3)           Number of treatment regimens received since mBC diagnosis, n (%)         100 (66.1)           One         41 (24.8) </td <td>Age (years), mean ± SD</td> <td>47.6 ± 13.5</td>	Age (years), mean ± SD	47.6 ± 13.5
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Selective estrogen receptor downregulators75 (45.5)Selective estrogen receptor modulators61 (37.0)Other12 (7.3)Currently taking treatment(s) for mBC, n (%)152 (92.1)	Chemotherapy	86 (52.1)
Selective estrogen receptor modulators61 (37.0)Other12 (7.3)Currently taking treatment(s) for mBC, n (%)152 (92.1)	Selective estrogen receptor downregulators	75 (45.5)
Other         12 (7.3)           Currently taking treatment(s) for mBC, n (%)         152 (92.1)	Selective estrogen receptor modulators	61 (37.0)
Currently taking treatment(s) for mBC, n (%) 152 (92.1)	Other	12 (7.3)
	Currently taking treatment(s) for mBC, n (%)	152 (92.1)



# CONCLUSIONS

- Among the ER+/HER2- mBC patients surveyed in this DCE, the most valued treatment attributes were efficacy (defined as time on treatment while disease remains stable before worsening) and the treatment being targeted to a specific mutation.
- The majority of patients with ER+/HER2- mBC responded that infusion or injection treatments were larger reminders of mBC than oral treatments; fewer patients felt that the frequency at which they needed to take treatments impacted their level of worry.
- Understanding these patient preferences may help improve treatment decisions.

## LIMITATIONS

- As with all survey studies, the study population recruited may not be representative of all women with mBC (e.g., this sample may be younger, have more digital literacy), and the self-reported responses may subject to recall bias.
- It is possible that additional treatment attributes not specified in the survey

Time on the stress that discose	2 months
remains stable before worsening	5 months
i entante etable serere hereennig	9 months
Dick of nausoa	16%
INISK OF HAUSEA	35%
Risk of rash	5%
	38%
Risk of severe diarrhea requiring hospitalization	0%
	9%
Risk the treatment is stopped due to side effects	3%
	6%
	12%
How the treatment is given	One oral tablet daily
	Two intramuscular injections monthly (during one doctor visit)
	Two intramuscular injections monthly (during one doctor visit), plus two oral tablets daily (4 days on drug, followed by 3 days off drug)
Treatment is specific to breast	No
cancer with your mutation status	Yes

<sup>a</sup>Evaluated among 153 patients with a known diagnosis date. <sup>b</sup>Evaluated among 160 patients with a known diagnosis date.<sup>c</sup>Multiple choices were allowed; therefore it is possible for the sum of the subcategories to exceed 100%.<sup>d</sup>Evaluated among 127 patients who were tested for genetic mutations. mBC, metastatic breast cancer; SD, standard deviation. could impact preferences.

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