**BACKGROUND**

Several classification models for sensitivity and resistance to endocrine therapies have been proposed for the clinical course associated with initial endocrine therapy.

Although endocrine therapy remains a foundation of treatment for hormone receptor-positive advanced breast cancer in the era of current molecular targeted drug, it has been unclear how to choose sequential strategy during the clinical course in endocrine responsiveness.

**OBJECTIVES**

**Endnote:** To evaluate the efficacy and safety of secondary endocrine therapy among estrogen receptor (ER)-positive, and human epidermal growth receptor 2-negative postmenopausal metastatic breast cancer patients who had (very) low sensitivity to initial endocrine therapy.

**METHODS**

**Study Design and Patients**

A multicenter observational cohort study (HORSE-BC cohort: HORSE-BC) was performed for 2nd-line treatment of patients with hormone receptor-positive breast cancer.

**Exclusion Criteria**

1. HER2-positive breast cancer.
2. Postmenopausal status.
3. Stage IV or progression/recurrence prior to 1 st line endocrine therapy.
4. Planned endocrine therapy for advanced breast cancer.
5. ECOG performance status of 0 or 1.

**Enrollment**

1. ER-positive breast cancer.
2. 5-year during adjuvant ET, or adverse events in subjects who were taking endocrine therapy during 3 months after registration.
3. Stage IV or progression/recurrence prior to 1 st line endocrine therapy.

**RESULTS**

The overall CRR was 8.16%, n=49, 90% CI: 4.11-17.77. fulvestrant subgroup: n=40, 8.2%, 90% CI: 4.1-17.77; pGE=0.084, 7.60%, 90% CI: 3.38-18.76, n=10, 10%, 90% CI: 7.50-17.40; low-sensitive group: n=25, 6.4%, 90% CI: 2.4-13.1. very low sensitive group: n=11, 8.3%, 90% CI: 5.0-28.2; vicius metastases: n=2, 8.3%, 90% CI: 2.4-23.1. 5-year during adjuvant ET, or adverse events in subjects who were taking endocrine therapy during 3 months after registration.

**DISCUSSION and CONCLUSIONS**

Since CBR was better than we expected, in the era of shared decision making, second line endocrine therapy that was chosen based on patients’ preference could be an optimal strategy.

Our subgroup analysis indicated that PGF-positive, very low sensitivity, and non-visceral metastases might have a clinical benefit from 2nd-line endocrine therapy.

Although both PGF-positive and non-visceral metastases could be a possible explanation factors, it was still unknown that "very low sensitive group" has better CBR than that of "low sensitive group". Since small sample size and/or multiple comparisons problem might result our effect, further larger study or meta-analysis will be required to explore the predictive marker of second line endocrine therapy.

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