

## A multicenter population-based study

### Supplement Material

1. Breast cancer patients with estrogen receptor negative, progesterone receptor negative, and human epidermal growth factor 2 positive (ER-PR-HER2+) from SEER database.

Inclusion criteria were as follows:

- 1) BC was the patients' one and only cancer that had been identified;
- 2) All cancer patients showed histopathological and morphological evidence in accordance with the International Classification of Cancer Diseases Edition III (ICD-O-3);
- 3) The molecular subtype of breast cancer is ER-PR-HER2+.

Exclusion criteria were as follows:

- 1) Patients suffering from two or more primary cancers (N=5048);
- 2) Patients with T0 stage (N=56);
- 3) Patients with M1 or unknown M stage (N=1865).

2. Breast cancer patients with estrogen receptor negative, progesterone receptor negative, and human epidermal growth factor 2 negative (ER-PR-HER2-) from SEER database.

Inclusion criteria were as follows:

- 1) BC was the patients' one and only cancer that had been identified;
- 2) All cancer patients showed histopathological and morphological evidence in accordance with the International Classification of Cancer Diseases Edition III (ICD-O-3);
- 3) The molecular subtype of breast cancer is ER-PR-HER2-.

Exclusion criteria were as follows:

- 1) Patients suffering from two or more primary cancers (N=14515);
- 2) Patients with T0 stage (N=119);
- 3) Patients with M1 or unknown M stage (N=2816).

Follow up is sustained until patients died, loss to follow-up, or December 31, 2019.

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**Supplementary Table 1.** Baseline characteristics of single PR positive breast cancer patients included from our hospital

Name	Marital	Median	Age	Race	Grade	Hist	T	N	Surgery	Radiation	Chemotherapy	Neoadjuvant	HER2	Endocrine therapy	survival_month	status
Not available	Married	NA	40-	Other	II	IDC	NA	NA	1	1	1	0	1	Initial	60	0
Not available	Married	NA	60-69	Other	III	IDC	T1	N0	1	0	1	0	0	intensify	47	1
Not available	Married	NA	70-79	Other	NA	IDC	NA	N1	1	0	0	1	1	Initial	11	1
Not available	Married	NA	70-79	Other	NA	IDC	T1	NA	1	1	0	0	0	Not given	37	1
Not available	Married	NA	40-49	Other	NA	IDC	NA	N0	1	0	1	0	0	Initial	13	0
Not available	Married	NA	60-69	Other	NA	IDC	T1	N1	1	1	1	1	0	intensify	60	0
Not available	Married	NA	40-49	Other	NA	No_IDC	T3	N0	1	1	1	1	1	Initial	60	0
Not available	Married	NA	50-59	Other	NA	IDC	T3	N1	1	1	1	1	1	Initial	25	1
Not available	Married	NA	50-59	Other	NA	IDC	T2	N0	1	0	0	0	1	intensify	9	1
Not available	Married	NA	70-79	Other	NA	IDC	T2	N2	1	1	1	1	1	Initial	20	0
Not available	Married	NA	40-49	Other	NA	IDC	NA	N0	1	0	1	0	0	Initial	50	0
Not available	Married	NA	50-59	Other	NA	IDC	T2	N1	1	1	1	1	0	Initial	53	0
Not available	Married	NA	50-59	Other	NA	IDC	T4	N2	1	1	1	1	1	intensify	22	1
Not available	Married	NA	50-59	Other	NA	No_IDC	NA	N0	1	1	1	0	0	intensify	60	0
Not available	Married	NA	60-69	Other	NA	IDC	T2	N1	1	1	1	1	0	Initial	60	0
Not available	Married	NA	60-69	Other	NA	IDC	NA	N0	0	0	1	0	0	Initial	6	1
Not available	Married	NA	60-69	Other	NA	IDC	T1	N2	1	1	1	1	0	Not given	17	0
Not available	Married	NA	50-59	Other	II	IDC	NA	N0	1	0	1	0	0	intensify	60	0
Not available	Married	NA	40-	Other	III	IDC	T2	N1	1	0	0	1	1	Initial	10	1
Not available	Unmarried	NA	40-49	Other	NA	IDC	T1	N0	1	0	1	0	0	intensify	60	0
Not available	Married	NA	40-49	Other	NA	IDC	NA	NA	1	0	1	0	0	intensify	45	0
Not available	Married	NA	40-49	Other	NA	IDC	T2	N0	1	1	1	0	0	intensify	38	0