

Table S1 Relationship between pCR and molecular subtype

Molecular subtype	All patients				χ^2	P value
	pCR (n=144)		Non-pCR (n=735)			
	N	%	N	%		
HR+/HER-2+	25	17.4	91	12.4	47.545*	<0.001*
HR+/HER-2-	26	18.1	353	48.0		
HR-/HER-2+	59	41.0	159	21.6		
TNBC	34	23.6	132	18.0		

*, statistically significant at $P \leq 0.05$. pCR, pathologic complete response; HR, hormone receptor; HER-2, human epidermal growth factor receptor 2; TNBC, triple-negative breast cancer.

Table S2 The relationship between the use of targeted drugs and pCR in HER-2 positive patients

Targeted therapy	HER-2-positive patients				χ^2	P value
	pCR (n=84)		Non-pCR (n=250)			
	N	%	N	%		
Trastuzumab + pertuzumab	2	2.4	10	4.0	0.476	0.49
Trastuzumab	82	97.6	240	96.0		

pCR, pathologic complete response; HER-2, human epidermal growth factor receptor 2.

Table S3 Relationship with the clinical characteristics and pCR according to age group

Patient characteristic	Variables	Age	All patients				χ^2	P value			
			pCR (n=144)		Non-pCR (n=735)						
			N	%	N	%					
Surgical methods	BCS	≤ 35 years	3	2.1	9	1.2	3.516	0.06			
		> 35 years	1	0.7	23	3.1					
	Mastectomy	≤ 35 years	15	10.4	44	6.0			3.561	0.06	
		> 35 years	125	86.8	659	89.7					
ER	Positive	≤ 35 years	9	6.2	33	4.5	6.115*	0.01*			
		> 35 years	41	28.5	401	54.6					
	Negative	≤ 35 years	9	6.2	20	2.7			0.904	0.34	
		> 35 years	85	59.1	281	38.2					
PR	Positive	≤ 35 years	7	4.9	25	3.4	8.291*	0.004*			
		> 35 years	25	7.6	325	3.8					
	Negative	≤ 35 years	11	17.4	28	44.2			0.779	0.38	
		> 35 years	101	70.1	357	48.6					
HER-2	Positive	≤ 35 years	11	7.6	21	2.6	1.600	0.21			
		> 35 years	73	50.7	229	31.2					
	Negative	≤ 35 years	7	4.9	32	4.5			2.065	0.15	
		> 35 years	53	36.8	453	61.7					
Clinical T stage	1	≤ 35 years	3	2.1	6	0.8	0.310	0.58			
		> 35 years	28	19.4	70	9.5					
	2	≤ 35 years	12	8.3	37	5.0			2.966	0.09	
		> 35 years	89	61.9	499	67.9					
	3	≤ 35 years	3	2.1	10	1.3			3.576	0.06	
		> 35 years	9	6.2	113	15.5					
Clinical N stage	0	≤ 35 years	7	3.5	5	0.7	8.984*	0.003*			
		> 35 years	19	13.2	79	10.8					
	1	≤ 35 years	3	2.1	29	3.9			1.070	0.30	
		> 35 years	76	52.8	391	53.2					
	2	≤ 35 years	5	3.5	11	1.5			4.708*	0.03*	
		> 35 years	9	6.3	75	10.2					
3	≤ 35 years	3	2.1	8	1.1	1.481	0.22				
	> 35 years	22	16.5	137	18.6						
KI67	$\leq 15\%$	≤ 35 years	3	2.1	16	2.2	0.625	0.43			
		> 35 years	29	20.1	259	35.2					
	$> 15\%$	≤ 35 years	15	10.4	37	5.0			3.119	0.08	
		> 35 years	97	67.4	423	57.6					
P53	0	≤ 35 years	11	7.6	33	4.5	4.526*	0.03*			
		> 35 years	55	38.2	362	49.3					
	1	≤ 35 years	4	2.8	13	1.8			0.716	0.40	
		> 35 years	30	20.8	162	22.0					
	2	≤ 35 years	2	1.4	3	0.4			1.799	0.18	
		> 35 years	15	10.4	76	10.3					
	3	≤ 35 years	1	0.7	4	0.5			0.044	0.84	
		> 35 years	26	18.1	82	11.2					
	Stage	I + II	≤ 35 years	9	6.3	29			3.9	0.610	0.44
			> 35 years	94	65.3	413			56.2		
III		≤ 35 years	9	6.3	24	3.3	7.648*	0.006*			
		> 35 years	32	22.1	269	36.6					

*, statistically significant at $P \leq 0.05$. BC, breast cancer; BCS, breast-conserving surgery; BMI, body mass index; ER, estrogen receptor; HER-2, human epidermal growth factor receptor 2; pCR, pathologic complete response; PR, progesterone receptor.

Table S4 Descriptive characteristics of BC patients by age at diagnosis after PSM

Patient characteristic	Variables	Age group				P value
		≤35 years (n=71)		>35 years (n=71)		
		N	%	N	%	
ER	Positive	42	59.2	46	64.8	0.49
	Negative	29	40.8	25	35.2	
PR	Positive	32	45.1	28	39.4	0.50
	Negative	39	54.9	43	60.6	
HER-2	Positive	32	45.1	21	37.4	0.06
	Negative	39	54.9	50	62.6	
KI67	≤15%	19	26.8	22	30.9	0.58
	>15%	52	73.2	49	69.1	
P53	Positive	44	62.1	31	43.6	0.03*
	Negative	27	37.9	40	56.4	
Stage	I + II	58	81.7	39	54.9	0.001*
	III	13	18.3	32	45.1	
Clinical T stage	1+2	58	81.7	56	78.9	0.67
	3	13	18.3	15	21.1	

*, statistically significant at $P \leq 0.05$. BC, breast cancer; ER, estrogen receptor; HER-2, human epidermal growth factor receptor 2; pCR, pathologic complete response; PR, progesterone receptor; PSM, propensity score matching.

Table S5 Relativity analysis between clinical characteristics and pCR after PSM

Patient characteristic	Variables	All patients				χ^2	P value
		pCR (n=24)		Non-pCR (n=118)			
		N	%	N	%		
Age	≤35 years	18	75.0	53	44.9	7.220*	0.007*
	>35 years	6	25.0	65	55.1		
ER	Positive	14	58.3	74	62.7	0.162	0.69
	Negative	10	41.7	44	37.3		
PR	Positive	8	33.3	52	44.1	0.942	0.33
	Negative	16	66.7	66	55.9		
HER-2	Positive	12	50.0	40	33.9	2.228	0.14
	Negative	12	50.0	78	66.1		
KI67	≤15%	3	12.5	38	32.2	3.770	0.052
	>15%	21	87.5	80	67.8		
P53	Positive	10	41.7	48	40.7	0.008	0.93
	Negative	14	58.3	70	59.3		
Stage	I + II	12	50.0	65	55.1	0.208	0.65
	III	12	50.0	53	44.9		
Clinical T stage	1	20	83.3	94	79.7	0.170	0.68
	2	4	16.7	24	20.3		

*, statistically significant at $P \leq 0.05$. ER, estrogen receptor; HER-2, human epidermal growth factor receptor 2; PR, progesterone receptor; pCR, pathologic complete response; PSM, propensity score matching.

Table S6 Logistic analysis between age and pCR

Age	B	SE	Wald	OR	95% CI	P value
>35 years	Ref					
≤35 years	1.303	0.506	6.617	3.679	1.364–9.927	0.01*

*, statistically significant at $P \leq 0.05$. pCR, pathologic complete response; Ref, reference; SE, standard error; CI, confidence interval.