

Supplementary Information

Decreased survival in patients with carcinoma of axillary tail versus upper outer quadrant breast cancers: A SEER population-based study

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Running Title: Decreased survival in patients with carcinoma of axillary tail

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Fig. S1

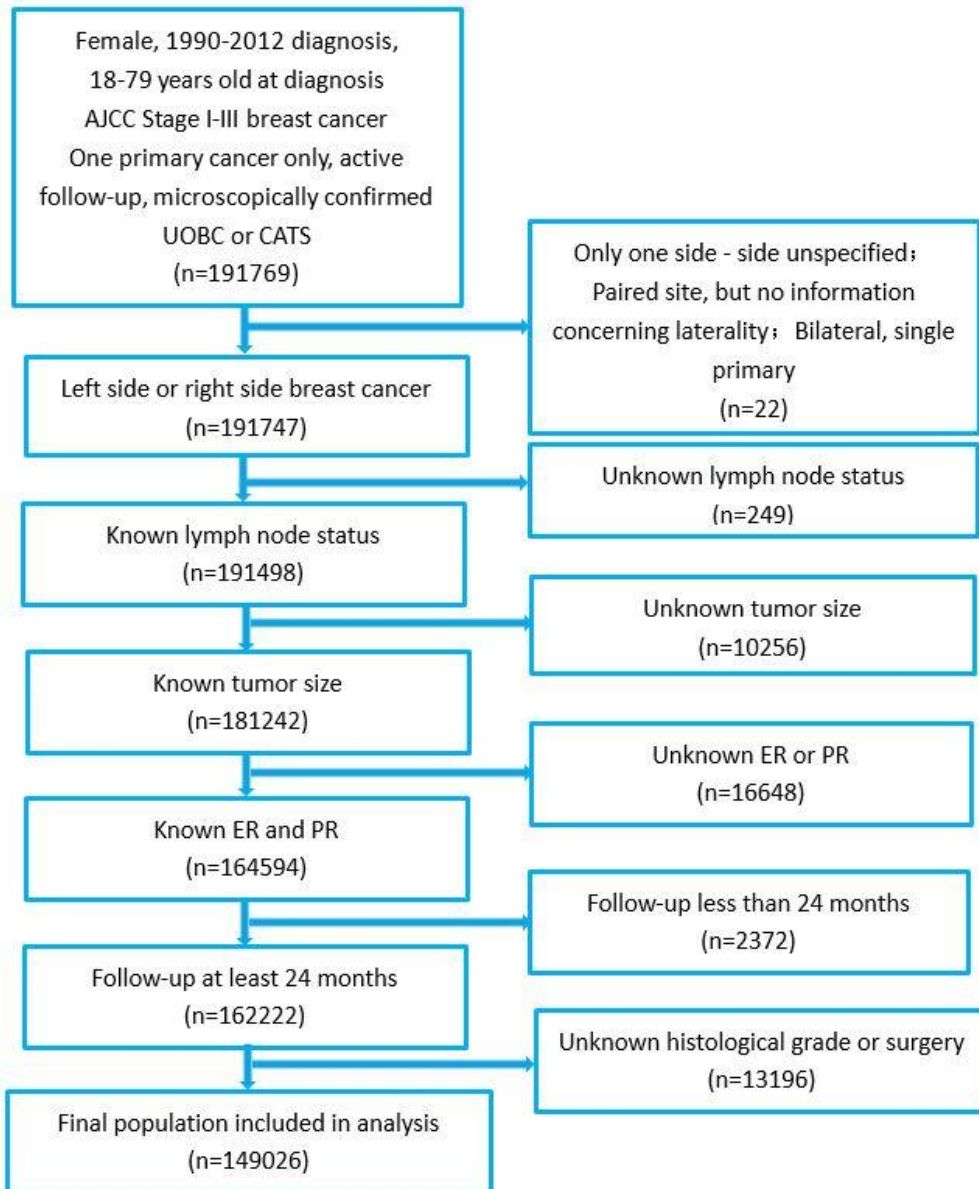


Fig. S1 Flow diagram for selection of the study cohort. A total of 149,026 patients (UOBC: n=146,343; CATS: n=2,683) were enrolled in this study.

Fig. S2

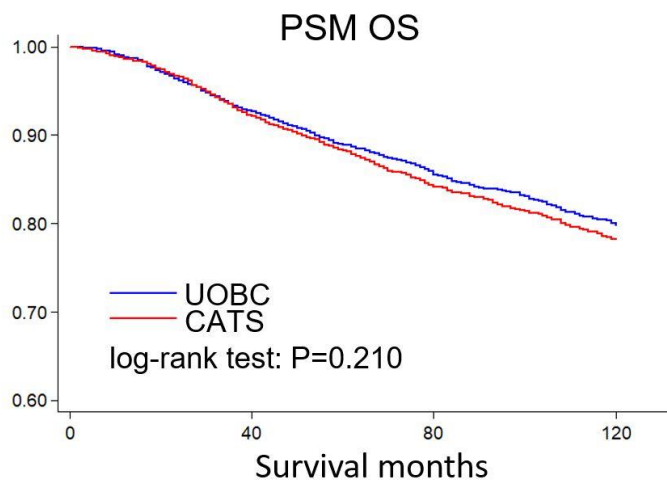
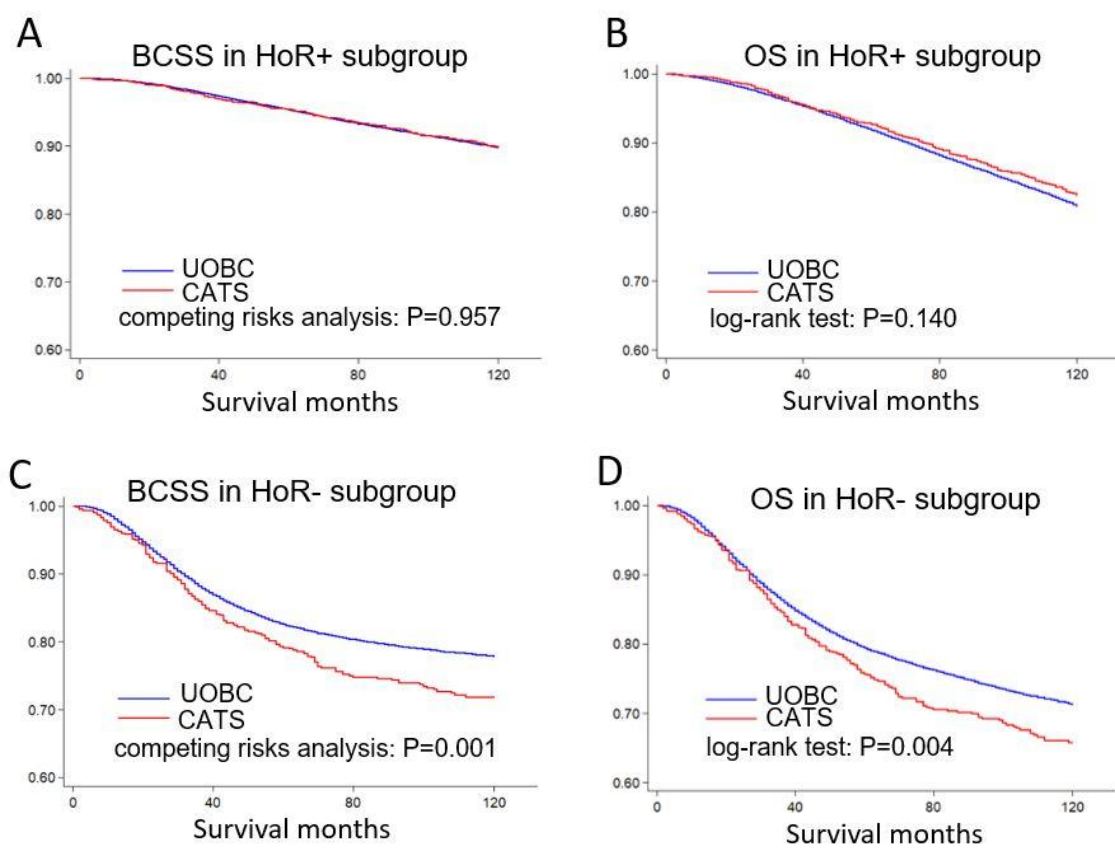


Fig. S2. Kaplan-Meier plots of 10-year OS comparing 1:1 Matched CATS and UOBC.

Abbreviations: CATS, carcinoma of the axillary tail of Spence; OS, overall survival; PSM, propensity score matching; UOBC, upper outer quadrant breast cancer.

Fig. S3



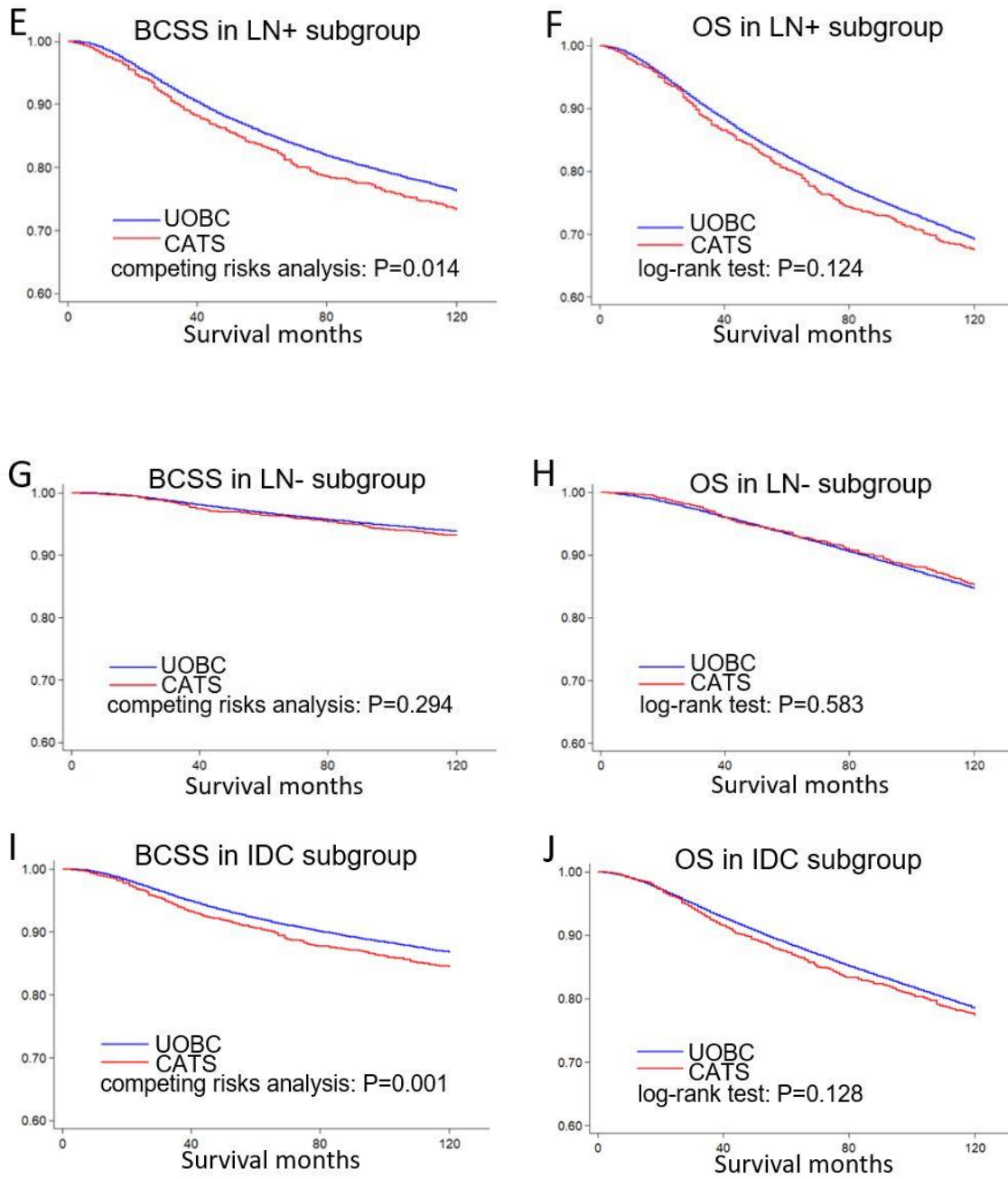


Fig. S3 Subgroups survival analysis. BCSS and OS in subgroups of HoR+, HoR-, LN+, LN- and IDC.

Abbreviations: BCSS, breast cancer-specific survival; CATS, carcinoma of the axillary tail of Spence; HoR, hormone receptor; IDC: infiltrating duct carcinoma; LN status, lymph node status; OS, overall survival; UOBC, upper outer quadrant breast cancer.

Table S1
Univariate Cox regression model analysis of BCSS and OS between CATS
and UOBC.

Variables	BCSS			OS		
	HR	95% CI	P	HR	95% CI	P
Year						
1990-1997	Reference			Reference		
1998-2005	0.62	0.59-0.64	<0.001	0.67	0.65-0.70	<0.001
2006-2012	0.46	0.44-0.48	<0.001	0.52	0.50-0.54	<0.001
Age						
18-45	Reference			Reference		
46-55	0.71	0.68-0.74	<0.001	0.79	0.75-0.82	<0.001
56-65	0.66	0.63-0.69	<0.001	0.93	0.90-0.97	0.001
66-79	0.79	0.76-0.83	<0.001	1.92	1.85-1.99	<0.001
Race						
White	Reference			Reference		
Black	1.97	1.88-2.06	<0.001	1.70	1.64-1.76	<0.001
Others	0.94	0.88-1	0.040	0.79	0.75-0.83	<0.001
Marital status						
Married	Reference			Reference		
Not married	1.29	1.25-1.34	<0.001	1.59	1.55-1.63	<0.001
Location						
UOBC	Reference			Reference		
CATS	1.20	1.08-1.34	0.001	1.07	0.97-1.17	0.160
Laterality						
Left	Reference			Reference		
Right	0.97	0.94-1	0.090	0.97	0.95-1.00	0.040
Histology						
IDC	Reference			Reference		
ILC	0.74	0.68-0.8	<0.001	0.85	0.81-0.90	<0.001
Others	0.80	0.76-0.84	<0.001	0.87	0.84-0.90	<0.001
Grade						
I	Reference			Reference		
II	3.34	3.07-3.63	<0.001	1.56	1.49-1.63	<0.001
III and UD*	8.77	8.09-9.51	<0.001	2.79	2.68-2.91	<0.001
Tumor size						
0-20mm	Reference			Reference		
21-50mm	3.69	3.56-3.83	<0.001	2.24	2.18-2.31	<0.001
>50mm	7.91	7.52-8.32	<0.001	4.17	4.00-4.35	<0.001
LN status						
Negative	Reference			Reference		
Positive	4.42	4.26-4.58	<0.001	2.40	2.34-2.47	<0.001
HoR						

Negative	Reference			Reference		
Positive	0.35	0.34-0.36	<0.001	0.52	0.50-0.53	<0.001
Surgery						
Lumpectomy	Reference			Reference		
Mastectomy	2.46	2.38-2.54	<0.001	2.03	1.98-2.08	<0.001
Radiation						
Yes	Reference			Reference		
No	2.45	2.16-2.78	<0.001	2.48	2.24-2.74	<0.001
Chemotherapy						
Yes	Reference			Reference		
No/Unknown	0.42	0.41-0.44	<0.001	0.86	0.84-0.88	<0.001

Abbreviations: BCSS, breast cancer-specific survival; CATS, carcinoma of the axillary tail of Spence; HoR, hormone receptor; LN status, lymph node status; OS, overall survival; UD, undifferentiated; UOBC, upper outer quadrant breast cancer.

Table S2
Characteristics of Patients 1:1 Matched CATS vs UOBC

	CATS (n=2,585)	UOBC (n=2,585)	P
Year, %			0.999
1990-1997	15.2	15.2	
1998-2005	43	43	
2006-2012	41.8	41.8	
Age, %			0.998
18-45	26.7	26.7	
46-55	27.9	28.1	
56-65	22.2	22.3	
66-79	23.1	22.9	
Race, %			0.955
White	80.8	80.9	
Black	13.4	13.4	
Others	5.9	5.7	
Marital status, %			0.837
Married	66.2	65.9	
Not married	33.8	34.1	
Laterality, %			0.781
Left	49.5	49.1	
Right	50.5	50.9	
Histology, %			0.988
IDC	78.8	79	
ILC	5.2	5.1	
Others	16	15.9	
Grade, %			0.992
I	19.3	19.3	
II	37.2	37.3	
III and UD	43.6	43.4	

Tumor size, %			0.825
0-20mm	68.1	68.2	
21-50mm	28.3	28.5	
>50mm	3.6	3.3	
LN status, %			0.977
Negative	59.8	59.8	
Positive	40.2	40.2	
HoR, %			0.825
Negative	26.2	26	
Positive	73.8	74	
Surgery, %			0.925
Lumpectomy	72.9	72.8	
Mastectomy	27.1	27.2	

Abbreviations: CATS, carcinoma of the axillary tail of Spence; HoR, hormone receptor; LN examined, number of examined lymph node; LN positive, number of positive lymph node; LNR, lymph node ratio; LN status, lymph node status; OS, overall survival; UD, undifferentiated; UOBC, upper outer quadrant breast cancer.

Table S3
Univariate logistic regression analysis on LN metastasis.

	OR	95% CI	P
Year			
1990-1997	Reference		
1998-2005	0.92	0.89-0.96	<0.01
2006-2012	0.81	0.78-0.83	<0.01
Age			
18-45	Reference		
46-55	0.73	0.70-0.75	<0.01
56-65	0.57	0.55-0.59	<0.01
66-79	0.44	0.43-0.45	<0.01
Race			
White	Reference		
Black	1.43	1.38-1.48	<0.01
Others	1.00	0.97-1.05	0.77
Marital status			
Married	Reference		
Not married	1.01	0.99-1.04	0.20
Location			
UOBC	Reference		
CATS	1.17	1.08-1.26	<0.01
Laterality			
Left	Reference		
Right	0.99	0.97-1.01	0.27
Histology			
IDC	Reference		
ILC	0.96	0.92-1.00	0.08
Others	0.83	0.80-0.85	<0.01
Grade			
I	Reference		

II	2.28	2.21-2.36	<0.01
III and UD	3.67	3.55-3.79	<0.01
Tumor size			
0-20mm	Reference		
21-50mm	3.69	3.61-3.78	<0.01
>50mm	9.35	8.87-9.86	<0.01
HoR			
Negative	Reference		
Positive	0.73	0.72-0.75	<0.01

Abbreviations: BCSS, breast cancer-specific survival; CATS, carcinoma of the axillary tail of Spence; HoR, hormone receptor; LN, lymph node; OS, overall survival; UD, undifferentiated; UOBC, upper outer quadrant breast cancer.