

Table SI. Univariate Cox regression analyses of the total cohort, patients following primary surgery and patients with negative HER2 expression.

Characteristic	Borders	Total cohort			Primary surgery			Negative HER2 expression		
		Hazard ratio	95% CI	P-value	Hazard ratio	95% CI	P-value	Hazard ratio	95% CI	P-value
Age, years	≥65 vs. <65	1.197	0.974-1.472	0.088	2.373	1.529-3.681	<0.001	1.231	0.968-1.567	0.091
Sex	female vs. male	0.812	0.586-1.124	0.209	0.760	0.404-1.430	0.396	0.789	0.545-1.141	0.208
(y)pT	≥2 vs. 1	1.577	1.375-1.810	<0.001	2.195	1.731-2.784	<0.001	1.553	1.330-1.815	<0.001
(y)pN	≥1 vs. 0	1.687	1.539-1.849	<0.001	2.046	1.709-2.448	<0.001	1.762	1.582-1.962	<0.001
L, stage	1 vs. 0	1.091	0.957-1.242	0.192	1.109	0.881-1.396	0.380	1.394	1.094-1.777	0.007
V, stage	≥1 vs. 0	0.888	0.774-1.020	0.093	0.811	0.639-1.029	0.085	0.893	0.761-1.048	0.165
Pn, stage	1 vs. 0	0.983	0.863-1.120	0.800	0.866	0.686-1.093	0.227	0.954	0.819-1.112	0.546
G, stage	≥2 vs. 1	1.934	1.292-2.897	0.001	1.905	1.270-2.858	0.002	1.774	1.106-2.844	0.017
Hexokinase expression	2 High vs. low	1.262	1.026-1.553	0.028	1.658	1.109-2.478	0.014	1.332	1.045-1.697	0.021

(y)pN, pathological lymph node status (after neoadjuvant therapy, if applicable); (y)pT, pathological tumor status (after neoadjuvant therapy, if applicable); G, grading, L, lymphatic vessel invasion; Pn, perineural invasion; V, venous vessel invasion; vs, versus; 95% CI, 95% confidence interval; -, not applicable.

Table SII. Univariate Cox regression analyses of male patients and patients with Y chromosome loss.

Characteristic	Borders	Male patients			Y chromosome loss		
		Hazard ratio	95% CI	P-value	Hazard ratio	95% CI	P-value
Age, years	≥65 vs. <65	1.268	1.018-1.580	0.034	1.271	0.930-1.736	0.132
Sex	Female vs. male	-	-	-	0.612	0.370-1.013	0.056
(y)pT	≥ 2 vs. 1	1.595	1.376-1.848	<0.001	1.760	1.418-2.183	<0.001
(y)pN	≥1 vs. 0	1.666	1.511-1.836	<0.001	1.719	1.498-1.973	<0.001
L, stage	1 vs. 0	1.077	0.939-1.234	0.289	1.083	0.887-1.322	0.435
V, stage	≥1 vs. 0	0.885	0.767-1.022	0.096	0.946	0.774-1.158	0.592
Pn, stage	1 vs. 0	0.989	0.863-1.132	0.869	0.976	0.800-1.189	0.807
G, stage	≥2 vs. 1	1.920	1.251-2.946	0.003	2.806	1.649-4.774	<0.001
Hexokinase 2 expression	High vs. low	1.262	1.012-1.572	0.039	1.465	1.066-2.014	0.018

(y)pN, pathological lymph node status (after neoadjuvant therapy, if applicable); (y)pT, pathological tumor status (after neoadjuvant therapy, if applicable); G, grading; L, lymphatic vessel invasion; Pn, perineural invasion; V, venous vessel invasion; vs, versus; 95% CI, 95% confidence interval; -, not applicable.

Table SIII. Multivariate Cox regression analyses of male patients and patients with Y chromosome loss.

Characteristic	Borders	Male patients			Y chromosome loss		
		Hazard ratio	95% CI	P-value	Hazard ratio	95% CI	P-value
Age, years	≥65 vs. <65	1.318	0.786-2.208	0.295	1.024	0.537-1.953	0.943
Sex	Female vs. male	-	-	-	0.346	0.126-0.950	0.040
(y)pT	≥ 2 vs. 1	1.903	1.351-2.682	<0.001	1.804	1.163-2.799	0.008
(y)pN	≥1 vs. 0	1.517	1.191-1.933	<0.001	1.682	1.283-2.205	<0.001
V, stage	≥1 vs. 0	0.844	0.631-1.130	0.255	-	-	-
G, stage	≥2 vs. 1	1.217	0.770-1.923	0.400	1.696	0.915-3.143	0.094
Hexokinase 2 expression	High vs. low	1.395	0.889-2.189	0.147	1.505	0.830-2.727	0.178

(y)pN, pathological lymph node status (after neoadjuvant therapy, if applicable); (y)pT, pathological tumor status (after neoadjuvant therapy, if applicable); G, grading; V, venous vessel invasion; vs, versus; 95% CI, 95% confidence interval; -, not applicable