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Supplementary Table 1: pCR associations for age at diagnosis, IHC ER% positivity, and PAM50 subtype among patients with HR+/HER2- tumors. Multivariable models are adjusted pairwise for indicated covariates.

Covariate	Age (≤40 yrs)		ER% positivity (≤66%)		PAM50 (non-luminal)		PAM50-ROR Category (high)	
	OR [95%CI]	p-value	OR [95%CI]	p-value	OR [95%CI]	p-value	OR [95%CI]	p-value
Univariable	4.7 (1.3-16.7)	0.016	22.6 (5.8-88.21)	<0.001	12.9 (3.2-52)	<0.001	N/A	N/A
Age (≤40 yr vs >40 yr)	N/A	N/A	22.5 (5.4-93.5)	<0.001	12 (2.9-49.1)	<0.001	N/A	N/A
Size (≤20mm vs >20mm)	6.3 (1.5-26.2)	0.011	65.5 (7.1-608.04)	<0.001	26.9 (4.4-166)	<0.001	N/A	N/A
clinical stage (I&II vs III)	4.7 (1.3-16.7)	0.016	27.4 (6.7-112.7)	<0.001	14.9 (3.6-61.3)	<0.001	N/A	N/A
Histology	4.7 (1.3-16.8)	0.019	22.2 (5.4-90.6)	<0.001	14.9 (3.5-63.7)	<0.001	N/A	N/A
ER% (≤66% vs >66%)	4.7 (1.1-20.6)	0.040	N/A	N/A	3.1 (0.41-23.3)	0.271	N/A	N/A
PR status IHC (pos vs neg)	4.9 (1.7-28.5)	0.007	15.6 (3.5-69.4)	<0.001	11.1 (2.7-46.4)	<0.001	N/A	N/A
Combined ER/PR status IHC	6.0 (1.4-25.7)	0.016	13.8 (2.7-70.8)	0.002	9.8 (2.3-42.6)	0.002	N/A	N/A
ER status SSP (pos vs neg)	3.9 (1.1-14.1)	0.040	49.4 (8.4-290.4)	<0.001	14.6 (3.2-67.1)	<0.001	N/A	N/A
PR status SSP (pos vs neg)	4.6 (1.2-17.9)	0.027	12.6 (2.5-63.3)	0.002	6.9 (1.6-30.4)	0.011	N/A	N/A
PAM50 (non-Lum vs Lum A/B)	3.8 (0.96-14.9)	0.057	11.1 (1.5-77.3)	0.015	N/A	N/A	N/A	N/A

N/A because odds ratios and confidence intervals cannot be computed. No pCR event was registered in the low/intermediate ROR category, hence it impossible to calculate odds-ratio due to the statistical problem of “complete separation”

Abbreviations: Confidence interval (CI); odds ratio (OR); Estrogen receptor (ER); Progesterone receptor (PR); Luminal (Lum); year (yr); versus (vs)

Supplementary Table 2: Multivariable Cox regression analyses for Recurrence-free interval among patients with HR+/HER2- tumors with residual disease after NACT.

	Univariable		Multivariable	
Covariates	HR [95%CI]	P-value	HR [95%CI]	P-value
Age (≤ 40 yr vs >40 yr)	2.09 [0.82-5.3]	0.122	2.23 [0.74-6.6]	0.154
Size continuous	1.02 [0.99-1.04]	0.104	1.02 [0.99-1.04]	0.119
ER% ($\leq 66\%$ vs $>66\%$)	3.9 [1.3-11.5]	0.015	1.69 [0.27-10.7]	0.578
PR status IHC (pos vs neg)	3.3 [1.4-7.8]	0.007	3.02 [0.93-1.04]	0.067
PAM50 (non-Lum vs Lum A/B)	2.85 [1.2-6.8]	0.018	1.42 [0.38-5.3]	0.600
Surgery (BCS vs Mastectomy)	0.09 [0.013-0.701]	0.021	0.14 [0.02-1.14]	0.066

Abbreviations: Neoadjuvant chemotherapy (NACT); Confidence interval (CI); Hazards ratio (OR); Estrogen receptor (ER); Progesterone receptor (PR); Luminal (Lum); year (yr); versus (vs)

Supplementary Figure 1: Distribution of PAM50 subtype and genomic risk of recurrence (SSP-ROR) categories by ER% positivity by IHC (a and c, respectively) and combined ER/PR status IHC status(b and d, respectively). P-values are from Fisher's exact 2-sided tests.

