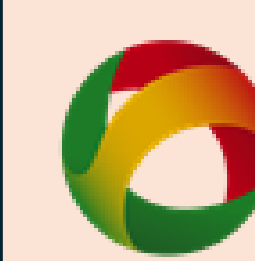


# REAL-WORLD EFFECTIVENESS OF NEOADJUVANT DUAL HER2 BLOCKADE IN EARLY-STAGE HER2-POSITIVE BREAST CANCER.



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## BACKGROUND

Treatment with dual HER2 blockade, combining Trastuzumab and Pertuzumab with chemotherapy, is currently the therapeutic option in the neoadjuvant setting for patients with early-stage disease and HER2 overexpression.

## AIM AND OBJECTIVES

This study aimed to evaluate the use of dual HER2 blockade in real-world clinical practice. The primary objective was to determine the rate of pathological complete response (pCR). Secondary objectives included assessing factors influencing pCR, progression-free survival time and overall survival.

## MATERIALS AND METHODS

Patients with early-stage HER2-positive breast cancer treated between 2017 and 2024 were retrospectively analysed. Pathological complete response was evaluated, and the impact of various influencing factors was assessed using Pearson's Chi-squared or Fisher's exact tests, with p-values adjusted using the Benjamini-Hochberg method. Logistic regression was used to examine associations between pCR and significant variables. Statistical analyses were performed using R.

## RESULTS

Of the 84 patients included, 44 (52.4%; 95% CI: 41.7%–63.1%) achieved a pCR. In the overall cohort, pCR was significantly associated with HR status ( $p < 0.005$ ) and HER2 expression ( $p < 0.0005$ ), with lower pCR rates observed in HR-positive and HER2 IHC 2+/FISH+ tumors (table 1). In multivariable analysis, HR-negative status (OR: 7.6; 95% CI: 2.6–26.6) and HER2 IHC 3+ expression (OR: 6.6; 95% CI: 1.6–26.6) were independently associated with a higher likelihood of achieving pCR (figure 1). Tumor size, nodal involvement, histological grade, Ki-67 expression, and menopausal status were not significantly associated with pCR. After a median follow-up of 45.9 months, the number of disease progression or death events was insufficient to estimate progression-free survival.

## CONCLUSION

Approximately half of the patients achieved pCR with neoadjuvant dual HER2 blockade, showing a positive association between HR negativity and treatment response. Additionally, a significant correlation was observed between lower HER2 expression (IHC 2+/FISH+) and reduced response rates. The average follow-up duration has not yet allowed for the estimation of median progression-free survival or overall survival.

## REFERENCES

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Table 1 – Association Between Clinicopathologic Variables and Pathologic Complete Response (pCR)

Variable	Category	pCR (n)	No pCR (n)	Adjusted p-value
Menopausal Status	Pre	6	10	0.590
	Peri	1	1	
	Post	35	27	
	Unknown	2	2	
Laterality	Right	35	27	0.269
	Left	28	11	
Tumor Stage (T)	T1	3	2	0,385
	T2	17	23	
	T3	21	11	
	T4	1	2	
	Tx	2	2	
Nodal Stage (N)	N0	17	11	0,385
	N1	4	9	
	N2	1	0	
	Nx	2	1	
	N+	17	11	
Histologic Grade	G1	1	0	0.384
	G2	17	21	
	G3	24	19	
	Unknown	2	0	
HER2 Status	2+/FISH+	5	17	<0,005*
	3+	39	23	
HR	Negative	25	6	<0. 0005*
	Positive	19	34	
Ki67	<30%	5	10	0.274
	>30%	38	30	
	Unknown	1	0	

\*Significant

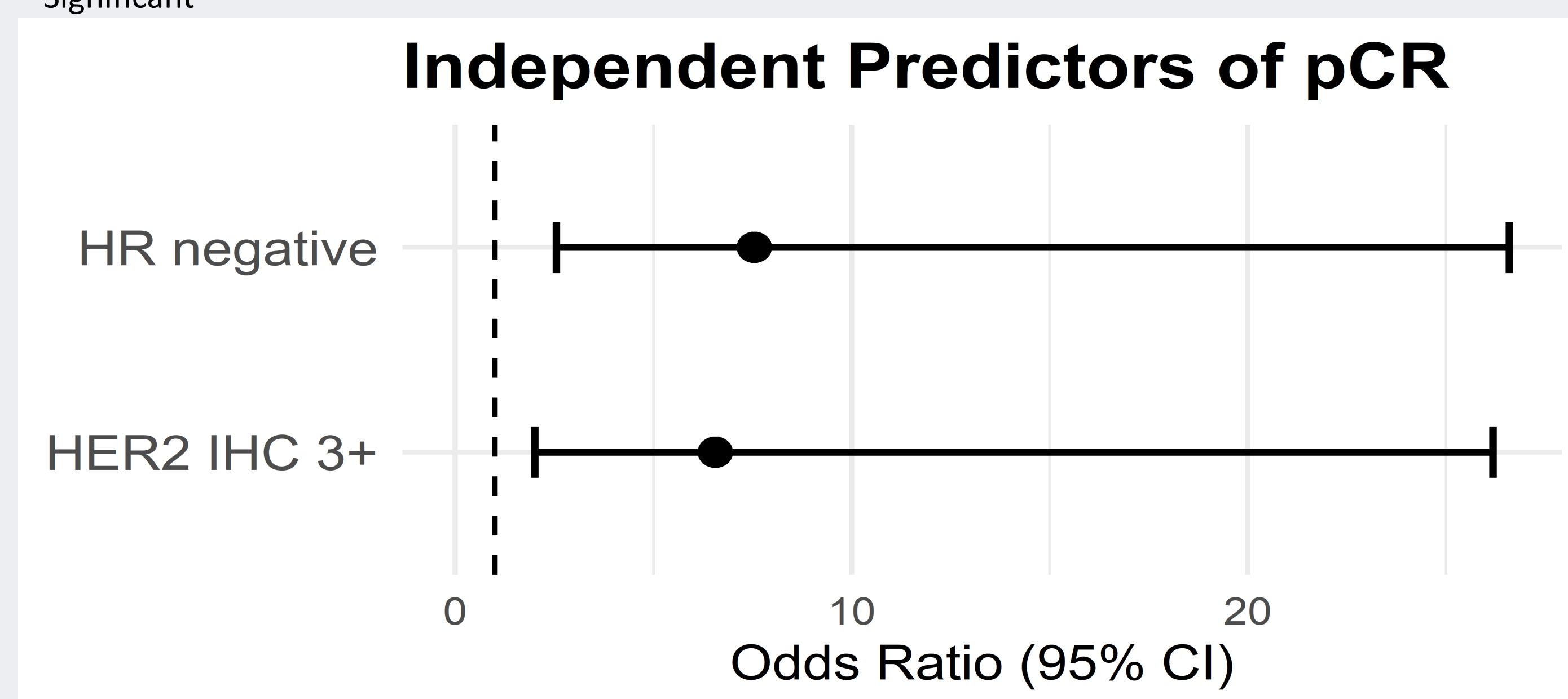


Figure 1: Forest plot of odds ratios (95% CI) for HR-negative status and HER2 IHC 3+ as independent predictors of pathologic complete response (pCR) in breast cancer patients. Dashed line indicates null OR (1).

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