

Personalized treatment approaches with HER2DX in early HER2-positive breast cancer: a precision tool for treatment decision-making.

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Background and Objectives

HER2DX[®] test is a genomic assay that evaluates the expression of 27 genes across four signatures (proliferation, luminal, immune and HER2 amplicon). The test provides prognostic (HER2DX risk score), predictive (HER2DX pathological complete response [pCR] score) information and levels of *ERBB2* expression (ERBB2-score) in HER2+ early breast cancer (BC).

Here, we outline the preliminary results from the ongoing decision impact study of HER2DX at Valencia.

Methods

- This was an observational, prospective, pilot multicentric study involving 10 hospitals in Valencia, region of Spain, to evaluate the clinical utility of HER2DX in early stage HER2+ BC patients between February 2023 to March 2024.
- HER2DX tests were conducted at a central lab in Barcelona (Spain)
- We analyzed the first consecutive 66 HER2DX tests performed in patients with HER2+ breast cancer, from Valencia medical centers, who consented for research purposes.
- The primary objective was to determine the percentage of change in the therapeutic plan after the results of the HER2DX test were made available to the treating oncologist.
- The impact of the HER2DX test on clinical management was evaluated by examining the proportion of cases where treatment strategies were modified based on test results. This included instances of treatment de-escalation, particularly in reducing the use of poly-chemotherapy.

References, COI & reprints

References: 1. Prat A et al. Ebiomedicine, 2022;

COI: The first author does not have conflicts of interest.

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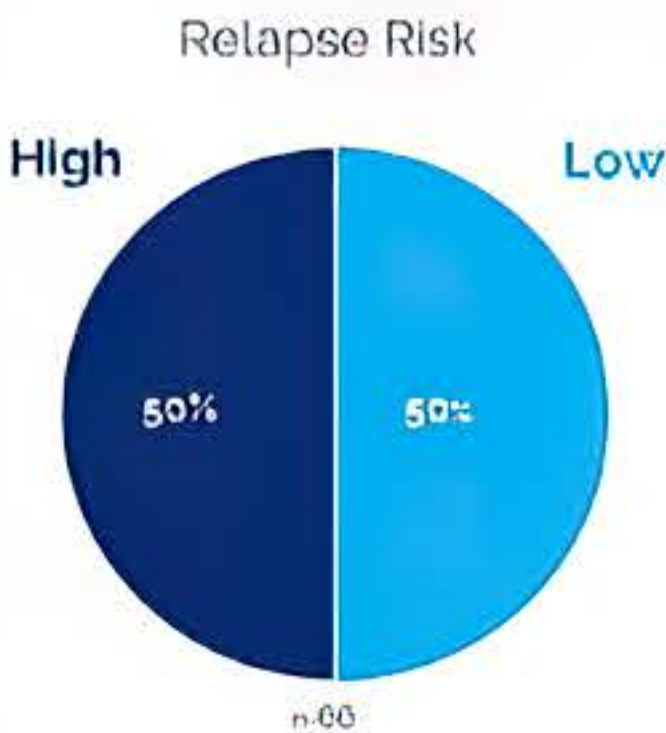
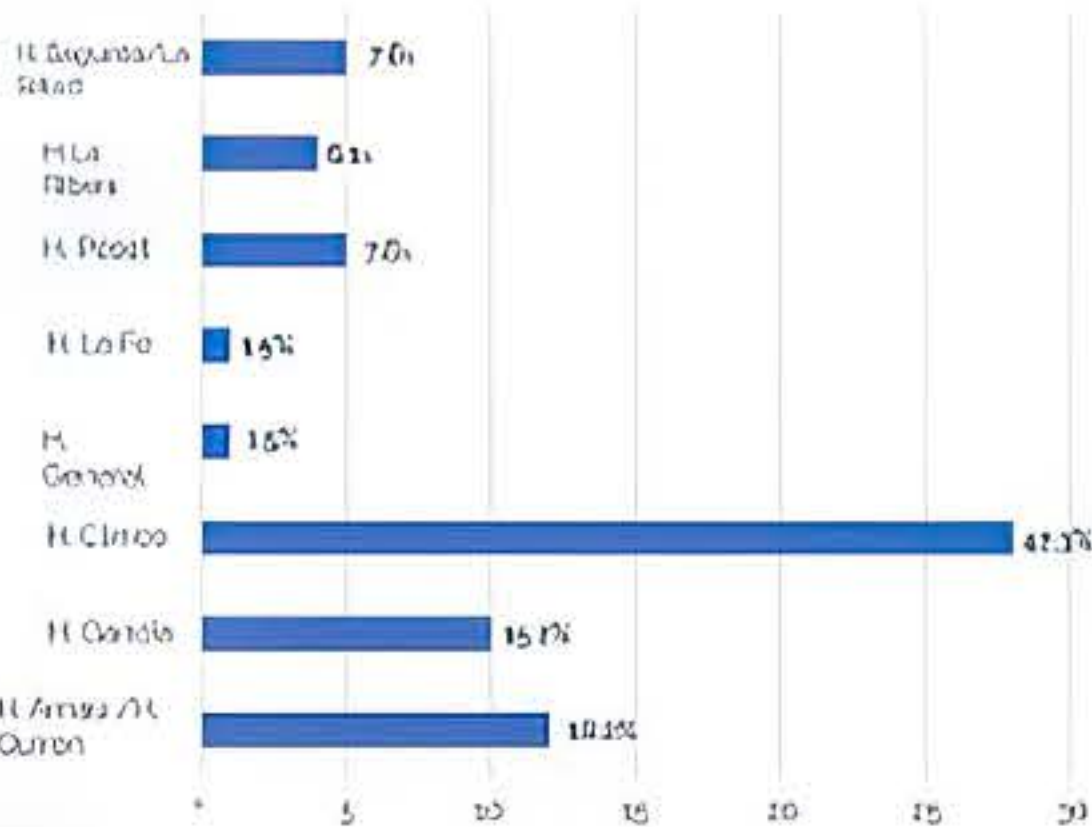
1- Characteristics of patients

	N	%
Number of patients	66	100
Median age (yr. range)	54 (36-84)	-
Stage		
I	13	19.7
II	28	42.4
III	16	24.2
IV	0	0.0
V	0	0.0
VI	0	0.0
Grade		
G1	9	13.6
G2	40	60.6
G3	17	25.8
Hormonal receptors		
Positive	44	66.7
Negative	20	30.3
Unknown	2	3.0
Median Ki67 (range)	30 (10-95)	-

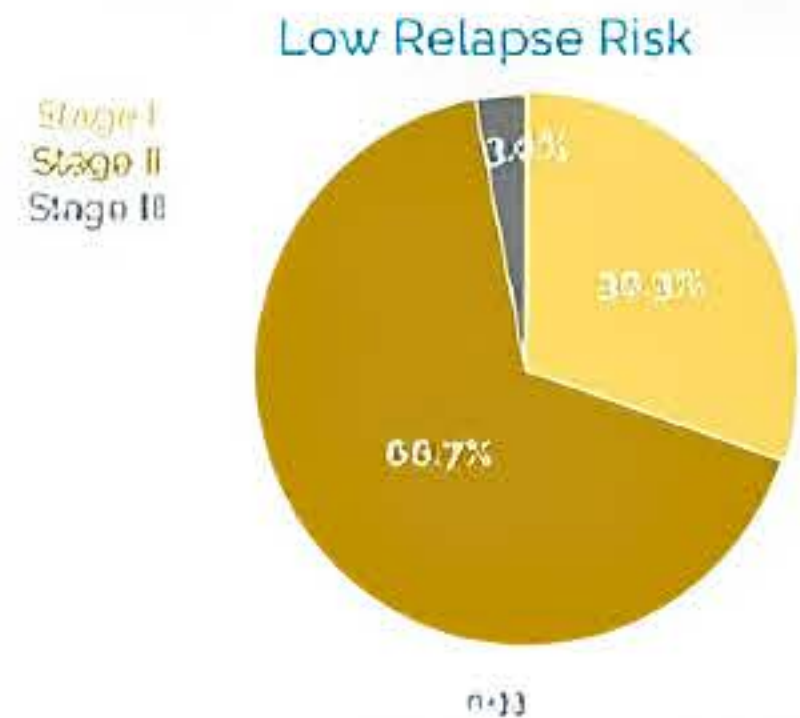
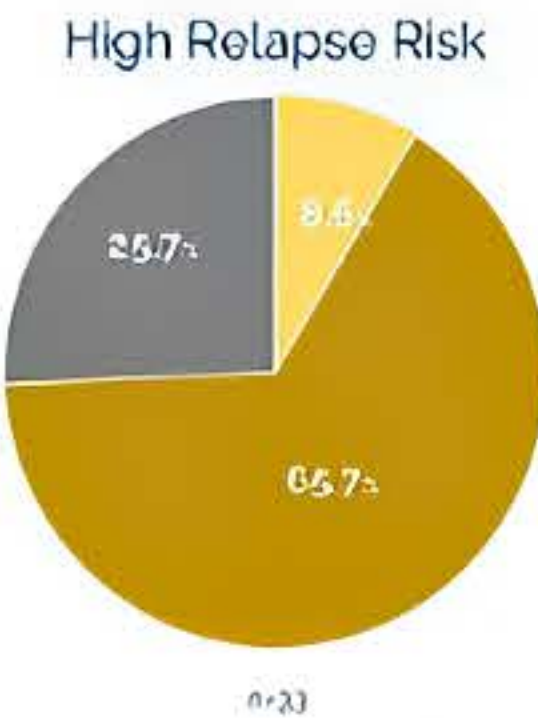
We analyzed the first consecutive 66 HER2DX tests performed. Median age was 54 years (range 35 -84). The majority of pts were classified as **stage II** (66.7%), follow by stage I (19.7%), and **stage III** (13.6%).

Luminal-HER2+ represented 66.7% of cases, and median **Ki67** was 30% (range 10-95%).

Notably, 15.2% of test were conducted post-surgery.



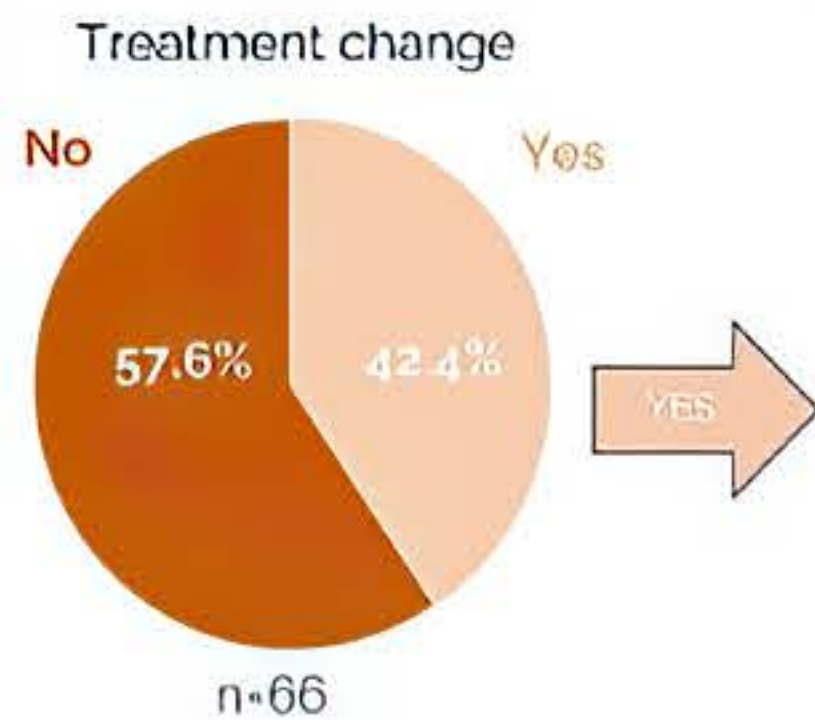
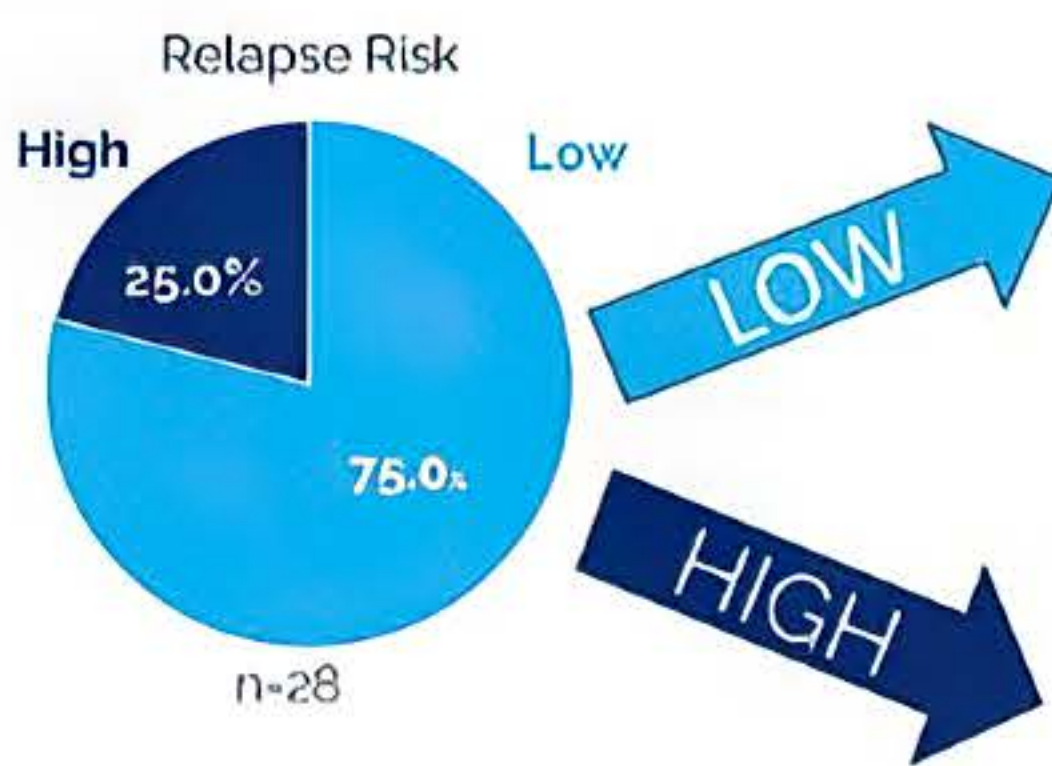
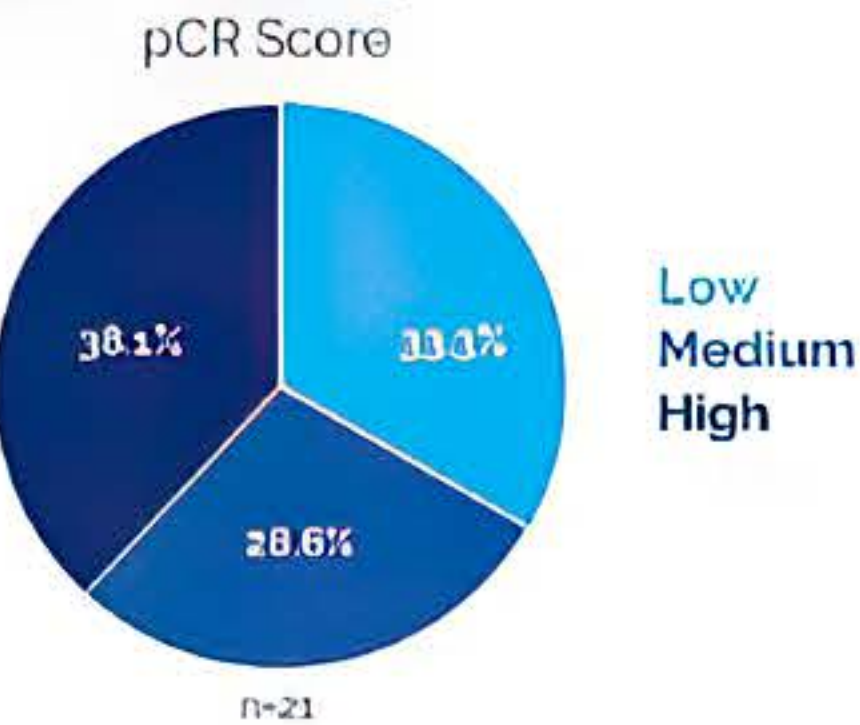
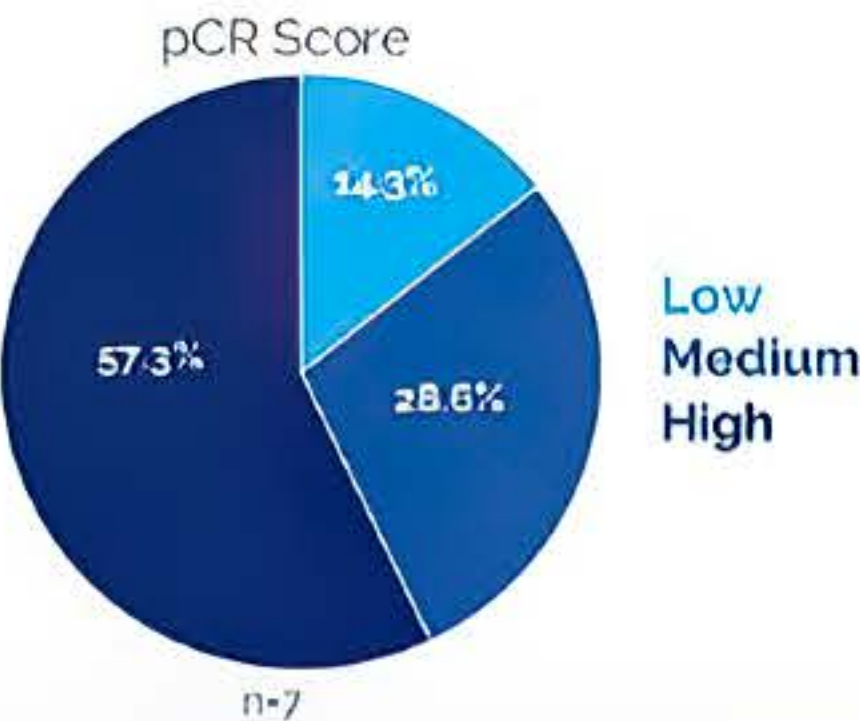
2- HER2DX results by clinical stages



Among stage II, 50% (22/44) of pts presented a high relapse risk, while only 23.1% (3/13) of stage I and 88.9% (8/9) of stage III were considered high risk.

Results

3-Change in treatment and therapeutic strategies based on HER2DX results and stages



STAGE	Low relapse risk (%)	High relapse risk (%)
I	23.8 (5/21)	28.6 (2/7)
II	76.2 (16/21)	42.8 (3/7)
III	0	28.6 (2/7)

A change in the treatment plan before and after the HER2DX result was observed in 28 of 66 (42.4%) cases, with 67.9% (19/28) of the cases involving patients diagnosed at stage II.

Treatment change by stages:

STAGE	Yes (%)	No (%)
I	53.8 (7/13)	46.2 (6/13)
II	43.2 (19/44)	56.8 (25/44)
III	22.2 (2/9)	77.8 (7/9)

Escalate: 7.7% (*)
Deescalate: 92.3%

*Two post-surgeries with High relapse risk -> adjuvant pertuzumab was added.

Conclusions

- This is a prospective pilot study conducted in Valencia with participation from 10 hospitals.
- The majority of patients (66.7%) were classified as stage II, follow by stage I (19.7%) and III (13.6%).
- Among stage II, 50% of patients presented a high relapse risk, while 23.1% of stage I and 88.9% of stage III were considered high risk.
- In 42.4% of cases, oncologist changed their treatment decision after HER2DX results, with 67.9% of the cases involving patients diagnosed at stage II.
- In 92.3% of these cases, oncologist de-escalated therapy (from poly-chemotherapy to single taxane).
- Our findings demonstrate the significant impact of HER2DX on clinical management decisions in early HER2+ BC, prompting oncologist to modify treatment strategies based on its results.