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Evaluation of HER-2 serum concentration in breast cancer patients receiving neoadjuvant chemotherapy

*Fjodorova Marija¹, Pavlova Jeļizaveta^{1,2},
Hasnere Sigita^{1,2}*

¹University of Latvia, Faculty of Medicine, Riga, Latvia

²Pauls Stradiņš Clinical University Hospital, Riga, Latvia

Background

Breast cancer is the most common cancer type in the world with incidence 47,8 per 100 000 of the population and the second leading cancer related mortality (*Globocan, 2020*).

HER-2 (human epidermal factor 2) is protooncogene that is overexpressed in certain types of breast cancer and is used as biomarker and target of therapy. Commonly it is detected by immunohistochemistry performing tumour core biopsy. The extracellular domain of the HER2 protein can be detected in serum.

Aim

The aim of the current study is to analyse HER-2 serum concentration in breast cancer patients and to conclude about serum HER-2 correlation with the stage of the disease and grade of the tumour.

Methods

Prospective study.

HER-2 serum concentration was measured in breast cancer patients receiving neoadjuvant chemotherapy.

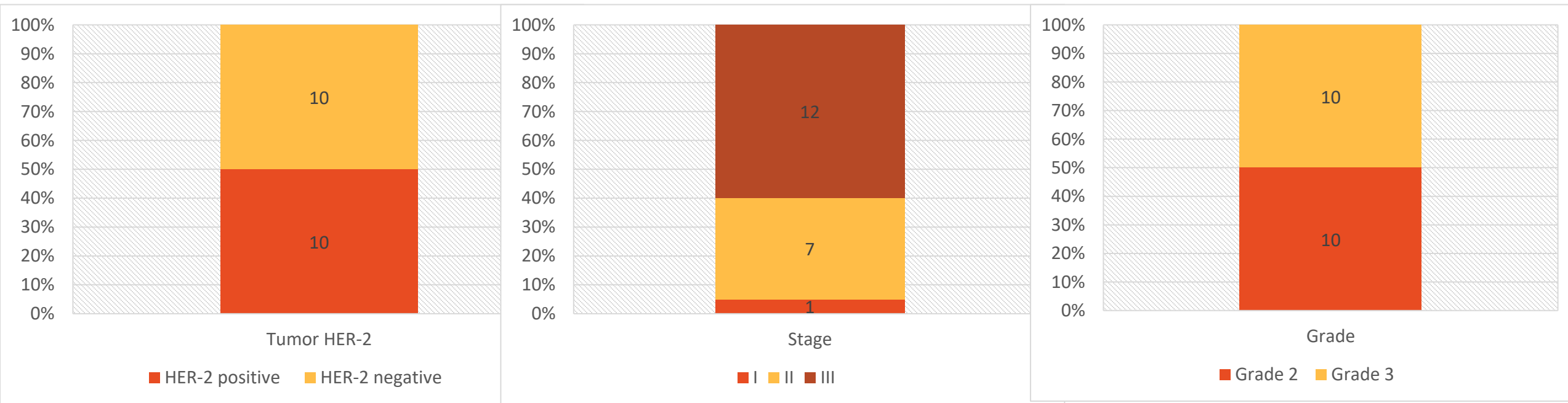
20 breast cancer patients were selected.

Nonparametric Spearman's correlations were used to determine correlation coefficient between HER-2 serum concentration and tumour grade and stage.

Data analysis was performed using *SPSS 22.0* and *Microsoft Excel* programs.

Results

The patients' age ranged 37 to 72 years.
The median age was 46.5 years.



Results

Statistically significant correlation between HER-2 serum concentration and tumour stage was not observed ($p=0.379$). Also, no correlation between serum HER-2 and tumour grade ($p=1$) was found.

Correlations

		vidHER	stage	grade	
Spearman's rho	vidHER	Correlation Coefficient	1.000	.208	.000
		Sig. (2-tailed)	.	.379	1.000
		N	20	20	20
stage		Correlation Coefficient	.208	1.000	.600**
		Sig. (2-tailed)	.379	.	.005
		N	20	20	20
grade		Correlation Coefficient	.000	.600**	1.000
		Sig. (2-tailed)	1.000	.005	.
		N	20	20	20

** . Correlation is significant at the 0.01 level (2-tailed).

Conclusions

Serum HER-2 does not correlate with grade and stage of the breast cancer in patients receiving neoadjuvant chemotherapy.

More patients should be involved to evaluate HER-2 serum concentration changes and their role in monitoring the course of breast cancer.