

# Tumor infiltrating lymphocytes – marker of therapy response in breast cancer

George IANCU<sup>1,2</sup>, Gheorghe PELTECU<sup>1,2</sup>, Nicolae GICA<sup>1,2</sup>, Radu BOTEZATU<sup>1,2</sup>, Dana TERZEA<sup>3</sup>, Dragoş MEDIAN<sup>1</sup>

1 - Filantropia Clinical Hospital, Bucharest, Romania

2 - „Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania

3 - Oncoteam Diagnostic, Bucharest, Romania

## Background

- Tumor infiltrating lymphocytes (TILs) - mononuclear immune cells (mainly CD8+ cytotoxic T lymphocytes), infiltrating tumor bed and surrounding tissues
- High levels of TILs might be associated with better response to chemotherapy and better overall survival and disease free survival in patients with particular subtypes of breast cancer\*.

## Material and methods

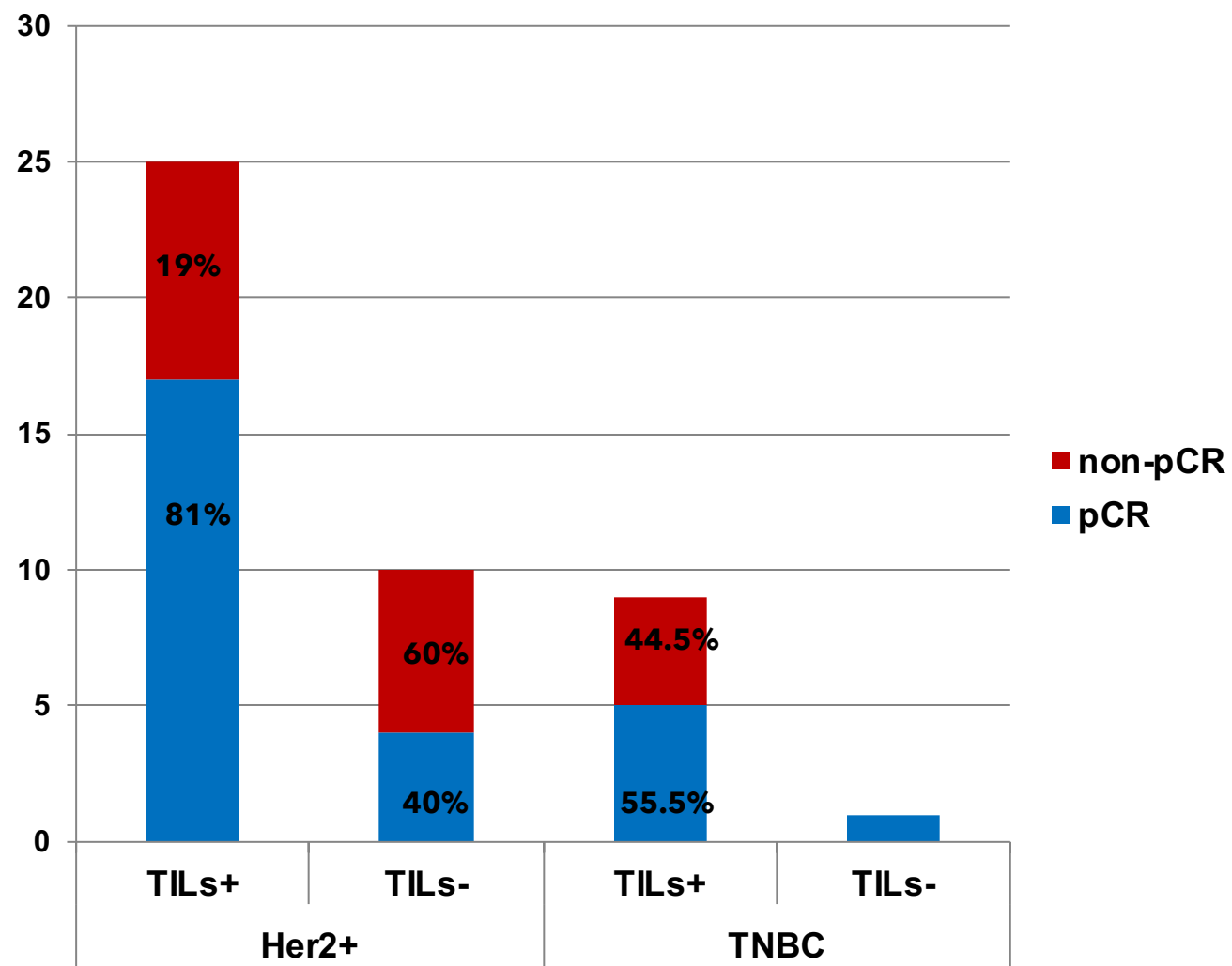
- 45 consecutive patients with HER2 positive or triple negative breast cancer (TNBC), retrospective analysis
- neoadjuvant setting - chemotherapy (antracycline-based chemotherapy and taxanes) and Trastuzumab (if HER2 positive)
- TILs - assessed using HE staining on core biopsies (cut-off 5%), in chemo-naive patients.
- Postoperative, pathological complete response (pCR) was evaluated for all specimens.

## Results

- median age - 58 years old.
- Pathology: 96% - invasive ductal carcinoma NST, 3% - invasive lobular carcinoma, 1% - mixt type.
- Regarding the molecular subtype, 63.6% - HER2 amplified, 37.4% - TNBC.
- Postoperative: overall, 60% of patients had pCR.
- 81% of pCR patients were TILs positive, while 67% of non-pCR patients were TILs positive.
- In the HER2 positive subgroup - 81% of the TILs positive and 40% of the TILs negative had pCR.
- In the TNBC subgroup - 55.5% of the TILs positive had pCR.
- Level of TILs expression did not show a significant difference between pCR and non-pCR groups (39% vs 38%), only the presence or absence of TILs.

	TILs +	TILs -	TOTAL
pCR	22 (81%)	5 (19%)	27 (60%)
non-pCR	12 (67%)	6 (33%)	18 (40%)

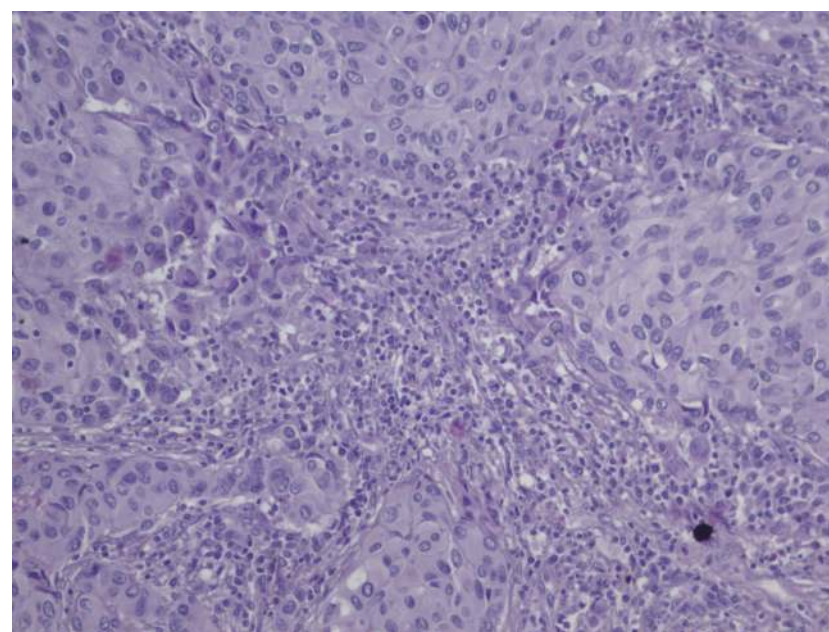
## pCR distribution on subpopulations, TILs positive or TILs negative



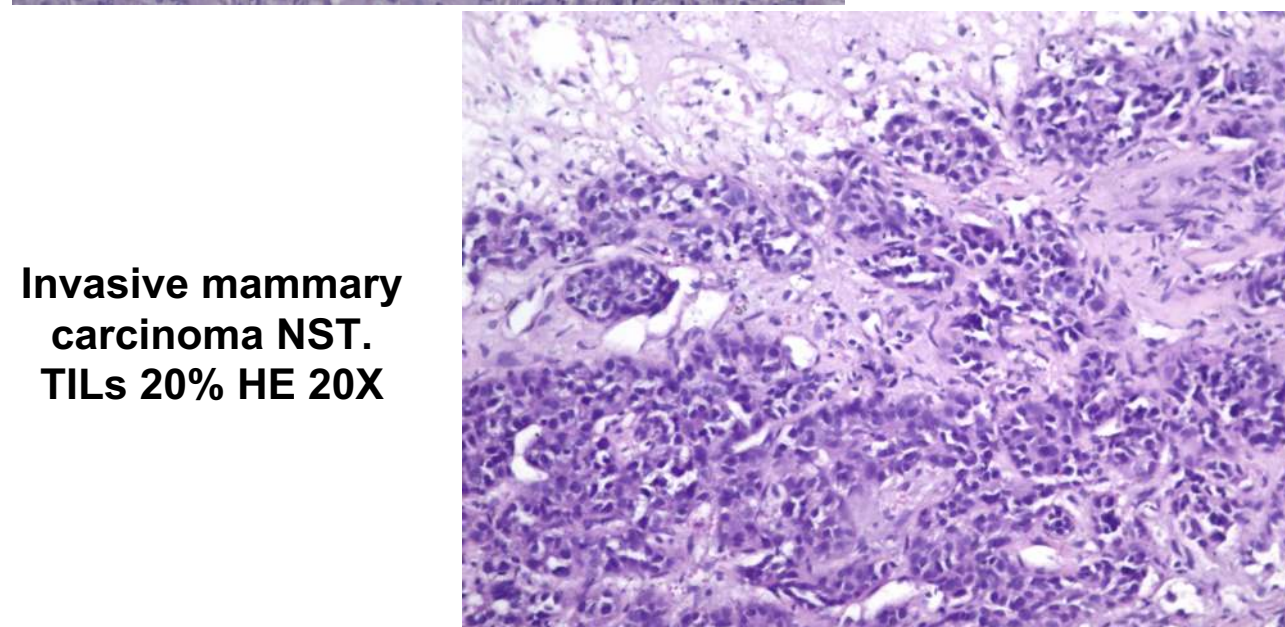
## pCR distribution on subpopulations, TILs positive or TILs negative, in HER2+ patients and in TNBC patients

## Conclusion

- Increasing pCR in HER2 positive and triple negative breast cancer correlated with the presence, but not with the levels of TILs
- TILs presence on biopsy specimen could be used as a marker of therapy response



Invasive mammary carcinoma NST. TILs 80% HE 20X



Invasive mammary carcinoma NST. TILs 20% HE 20X