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## Tumor associated macrophages in breast cancer

Ecaterina Carpenco, MD, Assistant Professor

Department of Histology, Cytology and Embriology, Laboratory of Morphology  
Nicolae Testemitsanu State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova

Corresponding author: [ecaterina.carpenco@usmf.md](mailto:ecaterina.carpenco@usmf.md)

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### Abstract

**Background:** Cancer research was focused on the studying of proper tumor cells for a long time. Despite the huge progress, there are still a lot of questions, that's why new molecular markers must be identified. These could reveal new information about tumorigenesis.

**Material and methods:** 15 cases of ductal invasive breast carcinomas have been analyzed and researched on tumor associated macrophages via immunohistochemistry. CD68 was used as a macrophage marker and CD68<sup>+</sup> cells were evaluated in tumor nest and peritumoral area, as well as hormone receptors (ER, PR) and HER2 protein.

**Results:** Most of tumors (10 cases out of 15/ 66.7%) were moderately differentiated (G2). The mean and std. error of mean of intratumoral CD68<sup>+</sup> cells were  $2.0 \pm 0.2$ , of peritumoral CD68<sup>+</sup> cells –  $1.4 \pm 0.2$ . Intratumoral CD68<sup>+</sup> cells registered higher scores than those located in the peritumoral area.

**Conclusions:** CD68<sup>+</sup> cells are more likely to be present in the tumor nest rather than in the peritumoral area. This research did not establish any significant correlations between intratumoral and peritumoral CD68<sup>+</sup> cells and patients' age, tumor grade, expression of ER and PR. The content of peritumoral CD68<sup>+</sup> cells inversely correlated with the number of HER2<sup>+</sup> carcinoma cells.

**Key words:** breast cancer, tumor associated macrophages, CD68, ER, PR, HER2.