

<https://doi.org/10.29289/259453942024V34S1060>

# Relationship between tumor-associated macrophages in the tumor microenvironment as prognostic indicators in breast neoplasms

Fabline Ribeiro Amorim<sup>1</sup>, Mariana Cardoso Silva<sup>1</sup>, Julia Kalida Diniz<sup>1</sup>, Luciana Vieira Queiroz Labre<sup>2</sup>

<sup>1</sup>Universidade Evangélica de Goiás, Department of Medicine.

<sup>2</sup>Universidade Federal de Goiás, Department of Postgraduate Program in Tropical Medicine and Public Health.

**Objective:** This study aimed to correlate the presence of tumor-associated macrophages (TAMs) with clinicopathologic characteristics in 82 cases of breast cancer and assess their impact on tumours as possible prognostic markers.

**Methodology:** Cases were selected among the records of anatomopathological examinations carried out at a reference center for cancer treatment. The inclusion criteria were histopathological diagnosis of invasive ductal carcinoma, immunohistochemical profile, clinicopathologic data available in the records, clinical follow-up for 5 years, and enough tumour tissue embedded in paraffin blocks to perform immunohistochemical analyses. For the statistical analyses, the cases were classified following a semiquantitative assessment of cell tagging as low infiltration or high infiltration and according to the mean value. **Results:** High levels of TAMs (CD68+) were significantly correlated with younger women, distant metastases, more advanced cancer staging, estrogen or progesterone receptors-negative, and triple-negative breast cancer (TNBC). The survival rate in cases of breast cancer with higher TAM infiltrate decreased, corroborating previous results. The number of CD68+ cells was a strong independent prognostic factor. **Conclusion:** Elevated levels of TAMs (CD68+) showed significant correlations with younger age groups, distant metastases, advanced cancer staging, negativity for estrogen or progesterone receptors, and TNBC. Survival rates were lower in breast cancer cases with increased TAM infiltration, consistent with earlier findings. The quantity of CD68+ cells emerged as a robust independent prognostic indicator.

**Keywords:** triple-negative breast neoplasms; macrophages; biomarkers; tumor; prognosis.