Histological perspective on effects of tumor associated macrophages in tumor microenvironment surrounding papillary thyroid carcinoma

**Abstract**
Tumor-associated macrophages (TAMs) are one of the most noticeable elements of the tumor microenvironment. The present study investigated the relationships between the density of CD163 immunolabeled M2-like TAMs with other histological properties of the tumor microenvironment and clinicopathological features in 90 patients with papillary thyroid carcinomas (PTC). The percentage of TAMs was higher in tumors with significant lymphocytic tumor response \((p=0.020)\), in tumors with a significant degree of stromal tumor response \((p=0.014)\), those with infiltrative tumor borders \((p=0.029)\), in conventional variant papillary carcinoma \((p=0.032)\), and in patients with autoantibodies for thyroid peroxidase \((p=0.014)\). The tumors associated with lymphocytic thyroiditis had lower numbers of TAMs \((p=0.027)\). In conclusion, for the first time, the present study attempts to establish a full assessment of interactions of CD163 expressing M2-like TAMs with the triad of primary tumor-tumor microenvironment-tumor behavior and above all, with markers of autoimmunity. Thus, these alternatively polarized macrophages may act in tumor progression and dissemination according to their various products, which may be ordered by tumor cells or neighboring immune cells. The molecular studies may reveal their roles in various tumors and may improve the therapy strategies targeting TAMs in various malignant tumors, including PTCs.

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