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Mature dendritic cells enriched in regulatory molecules may control regulatory T cells and the prognosis of head and neck cancer

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Abstract

We previously reported that regulatory T (Treg) cells expressing CTLA-4 on the cell surface are abundant in head and neck squamous cell carcinoma (HNSCC)[1]. The role of expanded Treg cells in the tumor microenvironment of HNSCC remains unclear. In this study, we revealed that the tumor microenvironment of HNSCC is characterized by the high expression of genes related to Treg cells, dendritic cells (DCs), and interleukin (IL)-17-related molecules. Increased expression of *IL17A, IL17F,* or *IL23A* contributes to a favorable prognosis of HNSCC. In the tumor microenvironment of HNSCC, *IL23A* and *IL12B* are expressed in mature dendritic cells enriched in regulatory molecules (mregDCs)[2]. The mregDCs in HNSCC are a migratory and mature phenotype; their signature genes strongly correlate with Treg signature genes in HNSCC. We also observed that *IL17A* was highly expressed in Th17 cells and exhausted $CD8^+$ T cells in HNSCC. These data suggest that mregDCs in HNSCC may contribute to the prognosis by balancing Treg cells and effector T cells that produce IL-17. Targeting mregDCs may be a novel strategy for developing new immune therapies against HNSCC.

REFERENCES

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