

RISK FACTORS

CD8⁺:FOXP3⁺ cell ratio is a novel survival marker for colorectal cancer

The tumor infiltrating CD8⁺:FOXP3⁺ cell ratio may be a predictive marker of disease-free survival in patients with colorectal cancer, according to a recent study.

A team at Kyushu University, Japan analyzed the relationships of intratumoral CD8⁺ T cells and FOXP3⁺ cells with traditional pathological measurements for surgically resected specimens from 95 patients with primary colorectal cancer.

The researchers did not detect any correlation between the number of intratumoral CD8⁺ T cells with any pathological parameter; however, lymph-node metastasis was significantly associated with the number of intratumoral FOXP3⁺ cells. Furthermore, Suzuki noted that “the ratio of the number of [intratumoral] CD8⁺ T cells to the number of [intratumoral] FOXP3⁺ cells (itCD8⁺:itFOXP3⁺ cell ratio) was negatively correlated with pathological stages.”

Although the number of CD8⁺ T cells and FOXP3⁺ cells was not associated with

disease-free survival or overall survival, Suzuki and colleagues found that the “CD8⁺:FOXP3⁺ ratio showed a significant positive correlation with disease-free survival ($P=0.023$) and overall survival ($P=0.010$).”

Importantly, a multivariate analysis revealed that this balance between CD8⁺ T cells and FOXP3⁺ cells is an independent indicator for overall survival in patients with colorectal cancer undergoing surgery.

Why this ratio might act as a prognostic marker remains to be elucidated; however, Suzuki suggested that “one possible answer is that antitumor immunity is determined by the immunological balance in the microenvironment of the tumor site.”

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Original article Suzuki, H. *et al.* Intratumoral CD8⁺T/FOXP3⁺ cell ratio is a predictive marker for survival in patients with colorectal cancer. *Cancer Immunol. Immunother.* **59**, 653–661 (2010)