Expression of Foxp3 in colorectal cancer but not in Treg cells correlates with disease progression in patients with colorectal cancer.

Abstract:
Regulatory T cells (Treg) expressing the transcription factor forkhead-box protein P3 (Foxp3) have been identified to counteract anti-tumor immune responses during tumor progression. Besides, Foxp3 presentation by cancer cells itself may also allow them to evade from effector T-cell responses, resulting in a survival benefit of the tumor. For colorectal cancer (CRC) the clinical relevance of Foxp3 has not been evaluated in detail. Therefore the aim of this study was to study its impact in colorectal cancer (CRC). Gene and protein analysis of tumor tissues from patients with CRC was performed to quantify the expression of Foxp3 in tumor infiltrating Treg and colon cancer cells. The results were correlated with clinicopathological parameters and patients overall survival. Serial morphological analysis demonstrated Foxp3 to be expressed in cancer cells. High Foxp3 expression of the cancer cells was associated with poor prognosis compared to patients with low Foxp3 expression. In contrast, low and high Foxp3 level in tumor infiltrating Treg cells demonstrated no significant differences in overall patient survival. Our findings strongly suggest that Foxp3 expression mediated by cancer cells rather than by Treg cells
contribute to disease progression.

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