

Immunological impact of anti-CTLA4 therapy in a neoadjuvant setting

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Abstract

CTLA4 blockade is an active immunotherapeutic strategy that is currently in clinical trials with cancer patients. Anti-CTLA4 therapy has led to measurable decreases in tumor size in patients with metastatic disease, including durable complete responses in some patients. While greater than 1000 cancer patients have been treated with anti-CTLA4 antibody therapy, there has been no hallmark immunological change demonstrated to be associated with drug administration or clinical benefit. Here we present data from a neoadjuvant anti-CTLA4 clinical trial in bladder cancer patients demonstrating immunological changes that are consistent in both the circulating blood and tumor microenvironment. Furthermore, our data demonstrates an increased ratio of effector to regulatory T cells. This is the first report in human patients that anti-CTLA4 therapy favorably shifts the ratio of effector to regulatory T cells, which may be a potential marker for clinical benefit.