EVENT ABSTRACT

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Heterogeneity and prognostic influence of tumor-infiltrating gamma-delta T lymphocytes in colon cancer patients

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Tumors grow in a complex and intricated network of epithelial and mesenchymal cells, inflammatory and immune cells and the characterization of immune contexture is a major prognostic factor for patients survival and represent a target for innovative cancer therapies.

We characterized colon cancer-infiltrating gamma-delta T cells in a cohort of 70 patients in terms of phenotype and effector functions and and correlated the immunological analysis with clinicophatological features of colon cancer. Results show that Vdelta1 T cells were the predominant population in the vast majority of specimens and upon short term mitogen in vitro stimulation produced IL-10, while Vgamma9Vdelta2 T cells were found uniformly at lower proportion in most of the patients, had a predominant terminally-differentiated effector memory (TEMRA) CD45RA+CD27- phenotype, expressed cytotoxic molecules as perforin and granzyme B and upon short term in vitro stimulation with phosphoantigen produced pro-inflammatory cytokines as IL-17 and IFNgamma in different combinations.

Correlation with different clinicopathologic features demonstrates that higher percentage of tumor-infiltrating Vgamma9Vdelta2 T cells are found in well differentiated tumors and in patients with early-stage disease and absence of metastasis, moreover, intratumoral gamma-delta T cell numbers are positively correlated with overall survival of colon cancer patients.

In conclusion, our results highlight the role of gamma-delta T cells against colorectal cancer cells and suggest that immune response mediated by gamma-delta T lymphocytes may contribute to the immunosurveillance of colon cancer. These finding may foster the development of novel alternative or adjuvant therapies targeting gamma-delta T cells for the treatment of colon cancer patients.

Keywords: gamma-delta T cells, Colon Cancer, immunosurveillance, Immunotherapy, tumor immunity

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