IBI Cross-Disciplinary Sandwich Seminar

“Tumor Angiogenesis and Angiostatic Therapy Modulate the Tumor Immune Response”

Monday – December 3, 2012 – 12:15 p.m.
EPFL – room SV 1717a

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host: Dr. P. Nowak-Sliwinska

Abstract

We have previously shown that tumors protect themselves against immunity by ongoing angiogenesis. Mechanistically, angiogenic growth factors suppress leukocyte binding adhesion molecules, such as intercellular adhesion molecule-1 (ICAM-1) and vascular cell adhesion molecule-1 (VCAM-1), in the tumor vasculature resulting in prevention of leukocyte infiltration and eventual tumor escape from immunity. Anti-angiogenic strategies in preclinical animal models have been shown to make tumors more vulnerable to the immune system. The introduction of targeted agents has substantially improved treatment of metastatic clear-cell renal cell carcinoma (RCC). However, complete responses are rare and therapy is not curative. We performed phase II trials of metastatic RCC patients with VEGF pathway targeted therapies, sunitinib or bevacizumab, given prior to cytoreductive surgery. In the primary tumors of these treated patients we found enhanced numbers of different subsets of leukocytes, including CD8 and regulatory T cells. The upregulation of vascular ICAM-1 by these agents may partially explain these findings. These results demonstrate that targeted agents are involved in modulating immune responses in RCC. In addition, current research adds to our understanding of how RCC escapes an effective anti-tumor response, and how targeted therapies can modulate these effects. The ultimate challenge will now be to design new improved angiostatic drugs, simultaneously supporting anti-tumor immune responses.

Sandwiches will be provided

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