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Immunomonitoring in cancer immunotherapy: Future perspectives

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Immune responses are tightly regulated by an amazing system of checkpoints that control positively or negatively the magnitude in a wide range of the immune responses. The presence of several checkpoints on T cells can promote activation or inhibition of the T cell, regulating the magnitude of immune response. The presence of several inhibitory pathways that block T cell responses offer particular strategies for mobilizing the immune system to attack cancer cells. With the approval of the checkpoint inhibitors monoclonal antibodies anti-CTLA-4 and anti-PD-1 for the treatment of melanoma, renal carcinoma and non-small cell lung have attracted extensive interest for strategies that enhance T-cell-mediated response against cancer. The balance of signaling via co-inhibitory or co-stimulatory molecules expressed on T cells and cancer cells have demonstrated to be a powerful approach to intensify antitumor immune responses. As more and more immunotherapies are made available, the overall goal is to screen cancer patients and determine which strategy would benefit cancer patients under immunotherapy and cancer type. Inhibitory and activation molecules on T cells are potent agents for combination therapy in order to improve anti-tumor responses especially for patients with orphan diseases such as squamous cell carcinoma of the anal canal associated with HPV infection. The analysis of tissue and blood samples from cancer patients is being conducted with new technologies like flow cytometry (FACS) and mass cytometry (Cytof). Here, the author will share some strategies in order to pursuit molecules that could help us to better understand cancer immunotherapy responses.

Biography

Jorge Augusto Borin Scutti is a Research Scientist at Immunotherapy Platform (MD Anderson Cancer Center). His work focuses on immunomonitoring from patients under immunotherapy, especially checkpoints inhibitors in several clinical trials in numerous types of cancer. He has earned his Master's and PhD in Microbiology and Immunology Department at Federal University of Sao Paulo (UNIFESP) working on Cancer Immunology. He has completed his Post-doctoral studies at MD Anderson Cancer Center at Pediatrics Department, evaluating pediatrics cancer such as diffuse intrinsic glioma pontine, its microenvironment, roles of natural killer and histone deacetylase inhibitors as cancer immunotherapy tool. He has published more than 35 articles in reputed journals.

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