

International Conference and Exhibition on

Pediatric Oncology and Clinical Pediatrics

August 11-13, 2016 Toronto, Canada

New age for pediatric oncology

Annick Beaugrand

Federal University, Brazil

Childhood cancer is a success story of modern medicine in which effective treatments have been identified for previously untreatable diseases. Treatment toxicity continues to be substantial despite advances in supportive care while survival rates have improved, cures for many with high risk and metastatic disease are not achievable despite aggressive surgical, chemotherapeutic and radiotherapy combination. The cure rates in pediatric oncology have been improved due to standardized treatment strategies and centralization of therapy. Much progress has been made using chemotherapeutic agents and treatment modalities introduced decades ago with refinement to improve disease-free survival. Better understanding of treatment-related toxicity has guided the design of less-toxic therapies. Elucidation of the principles of tumor biology and the development of novel laboratory technologies have led to significant progress, as bringing immunotherapies to the bedside. Understanding the molecular basis is changing the landscape of molecular genetics and genomic testing that may be used to identify risk factors, although the clinical utility of such testing is unclear. Molecular sub-typing is instrumental towards selection of model systems for fundamental research in tumor pathogenesis (as new medulloblastoma disease classification) and clinical patient assessment and can also be used to identify variants that influence drug metabolism or interaction of a drug with its cellular target, allowing customization of choice of drug and dosage. There has been significant progress in the clinical development of monoclonal antibodies as cancer therapies with promising results emerging from pediatric studies. Dramatic progress in scientific discovery and technology has led to rapid development and translation of therapies for the clinic. The challenge to the field of pediatric oncology is to develop biologic based approaches that enhance the benefits of standard therapies, lessen toxicity and extend the gains in survival to those high-risk groups that have not benefited from standard treatment.

Biography

Annick Beaugrand is a Pediatric Professor of Federal University of RN, Brazil since May, 2015 and a Pediatric Oncologist at LIGA Norte-Riograndense contra o Cancer, Natal, Brazil since June, 2014, Pediatric oncologist and Clinical research at Santa Marcelina Hospital- TUCCA, São Paulo, Brazil since July 2011. He was a Pediatric Oncologist and Clinical and Translational Research Scientist at Gustave Roussy Institut, Villejuif, France from April, 2008 to June, 2011. He was a fellow specializing in Pediatric Hematology & Oncology at Federal University of Paraná, Brazil from January 2006 to March 2008.

annickbeaugrand@gmail.com

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