



Pierre Yves Dietrich - Cancer Researcher of the Year Nominee

Pierre-Yves Dietrich, MD, PhD
Director, Center of Oncology
University Hospital Geneva, Switzerland

Treating brain tumors patients with the immune system : From the dream to the reality

Brain tumors, mainly malignant glioma, are a devastating disease. Despite some advances in conventional treatments, innovative strategies are urgently warranted. More than 15 years ago, I observed that gliomas are infiltrated by cells from the immune system that appeared to be activated. This was an unexpected finding in an era where it was thought that the brain was poorly or not accessible for immune cells. Based on that, I was one of the first to formulate and test the hypothesis of helping our immune system to fight brain tumors.

In 1994, being convinced of the therapeutic potential that could be exploited from the immune system, I founded the Laboratory of Tumor Immunology at the University Hospital Geneva. Supported by the Swiss National Science Foundation and Cancer Leagues, my labs rapidly focused on brain tumors. Over the next two decades, my research team provided outstanding contribution to the field of brain tumor immunology, understanding the mechanisms of effective anti-tumor immune responses in the brain and a tricks or methods used by the tumor to escape immune attacks.

A critical success, which had not been reached by others despite numerous attempts worldwide, was recently achieved in our lab with the identification of a series of cell surface molecules (called glioma-associated antigens) that displayed high expression on tumor cells with faint or absent expression on normal tissues. This allows accurate targeting of tumor cells by immune cells (like a key in a keyhole) without collateral damage to healthy brain tissue, and paves the way for the development of immunotherapies (therapeutic vaccines, T cell therapy) in humans suffering from brain tumors. Based on this critical work, an clinical trial using this innovative set of antigens for the first time in humans is set to start soon at the University Hospital Geneva through funding provide by Gateway for Cancer Research. This makes a dream come true for me with the potential impact that this could have for brain cancer patients.

I am currently a full professor at the School of Medicine and Director of the Center of Oncology at the University Hospital Geneva in Switzerland. In this role, I am merging the scientific and the medical community. Being convinced that best success for patients can only arise by frequent interaction and communication between scientists, physicians and patients. In my medical practice, patients are the constant source of motivation which is a philosophy I constantly pass on and instigate to my young physicians. A medical oncologist by training,

I also believe patients' best option to fighting cancer is through an integrated oncology model. Hence, at our cancer center we actively promote integrated, holistic patient care where all aspects, including social and psychological issues, must be considered to improve cancer patients' survival and quality of life. This makes the Medical Oncology Division at the University Hospital Geneva unique among its peers in Europe as this patient-centered model of care is not commonly embraced Switzerland or Europe for that matter. I am passionate about what I am doing and feel privileged to care for cancer patients.