

State of the art and future of IO in solid tumors: Example breast cancer

Stefan Glück

Celgene Corporation, USA

The idea of using the immune system to fight cancer is over 100 years old (Paul Ehrlich's "Magic Bullet"). But immunotherapy in solid tumors (ST) has been disappointing over the last several decades. A new molecular approach led to a better understanding of the immune system. Check point regulation, understanding roles of Tregs, Th1 and Th2, development of CAR-T cells, as well as regulation of DC and Macrophages, has led to discovery of immune checkpoint inhibitors (ICI) and modulators that are currently used in studies of several STs. Positive studies have led to the US

FDA approval of a few of these compounds. Moreover, PD-1 / PDL-1, MSI high (and dMMR), MTB are the currently "best" predictive markers for IO therapy and recently, Pembrolizumab was approved in ST with this companion diagnostic marker. Many large clinical trials in many ST and in all phases are underway (over 1200). We will discuss the mechanism of action, its impact on solid tumors, and some of the early results and next generations ICI.

e: sgluck@celgene.com