

The Oncological Immunotherapy – Innovation and Modernism in the Treatment of Cancer †

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Abstract: Forwarded by the rapid increase of understanding the immune system, immuno-oncology research has raised due to a solid knowledge that the immune system recognizes tumors, and their growth can be controlled due to immune surveillance. In this direction, small molecules, peptides, antibodies, vaccines, and other cellular therapeutic modalities are more and more utilized to orchestrate the immune system for cancer treatment. These types of immunological therapies provided significant benefits against cancer, among which are mentioned the immune checkpoint inhibitors (ICIs) and cell therapies. Starting with the outstanding discovery of James Allison of CTLA-4, for which the Nobel Price was asserted in 2014, along with Tasuko Honjo of Kyoto University, the first immune checkpoint molecule exploited for the therapeutic potential in cancer, continuing with the disruption of the PD-1 gene (the second checkpoint), followed by the approval of the FDA in 2014, for the pembrolizumab and nivolumab for non-small cell lung cancer, small cell lung cancer, renal cell carcinoma, Hodgkin lymphoma, squamous cell carcinoma, mismatch repair-deficient colorectal cancer, hepatocellular carcinoma, the immuno-oncology is still in its early childhood. It is to note that combined therapies lead to an unprecedented five-year overall survival above 50%, and predictors and novel strategies are urged to abate different toxicities.

Keywords: immune checkpoint inhibitors; immune-score; nivolumab.

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Conflicts of Interest

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