

## Attention should be paid to the Adverse Reactions of PD-1/PD-L 1 Inhibitors

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### ABSTRACT

The adverse reactions caused by using programmed cell death-1/programmed cell death ligand-1(PD-1/PD-L1) inhibitors were evaluated. PD-1 is an immune checkpoint receptor which expresses and activates specific immune cells. When PD-1 binds to immune cells, it will make them useless against cancer cells. PD-1/PD-L1 inhibitor has been an emerging therapy recently and is widely used in cancer patients. PD-1/PD-L1 inhibitor may cause immune imbalance in common cancer patients and organ transplant cancer patients, which may lead to T cells attacking their own organs, causing some adverse reactions against patients, and even endangering their lives.

**Keywords:** PD-1/PD-L1 inhibitor; Adverse reactions; Tumor; Organ transplantation

### DESCRIPTION

In recent years, new therapies such as targeted therapy and immunotherapy have appeared for cancer treatment. Immunotherapy can restore the specific recognition of T cells and kill cancer cells by PD-1/PD-L1 inhibitors. The activation of PD-1/PD-L1 signaling pathway is helpful for tumor immune escape. By blocking this pathway, the immune function of endogenous cells can be enhanced. It has anti-tumor effect on human body, but it also has some adverse reactions.

PD-1/PD-L1 inhibitors such as nivolumab and pembrolizumab have been marketed in China. PD-1/PD-L1 inhibitor increased the immune system's resistance to tumor. At present, two commonly used inhibitors of PD-1/PD-L1, Nafulizumab and Paprizumab, can improve the immunity, but they may also cause the imbalance of immunity in the human. It leads to some adverse reactions, even threatening life. Adverse reactions leading to immune imbalance and adverse immune responses can occur to any tissue and organ [1]. The adverse reaction often occurs in skin, endocrine organs, liver, gastrointestinal tract and lungs, and also in the nerves, blood vessels, kidneys, heart and eyes. Meanwhile, attention should be paid to myocarditis.

According to statistics of several reports [2], among 132 patients with non-small cell lung cancer treated with PD-1/PD-L 1 inhibitor, 66 patients had certain adverse reactions, accounting for 50%, and 15 patients had grade 3-4 adverse reactions, accounting for 11%. Although the adverse reactions of heart and

nervous system are uncommon, they are extremely difficult to cure and the mortality rate is high.

With the extensive use of PD-1 inhibitor, it provides good news for patients with advanced cancer. Among cancer patients, the number of PD-1/PD-L1 inhibitors before organ transplantation is increasing. Although PD-1/PD-L1 inhibitors have a certain inhibitory effect on cancer, they enhance the immunity of the body and may enhance the rejection reaction of transplanted organs. It is necessary to pay close attention to the expression of PD-1/PD-L1 molecules after operation, so that anti-rejection treatment can be carried out accurately and the incidence of postoperative rejection can be reduced [3].

PD-1/PD-L1 inhibitor has been shown to cause an immune imbalance, allowing T cells to attack their organs, in both common cancer patients and organ transplant cancer patients. At present, no effective solution has been found, which can only be carried out by paying close attention to the patient's physical indicators and the expression of PD-1/PD-L1 molecules. We need to effectively avoid level 3 adverse reactions, correct the plan in time, find out in time and change the plan as soon as possible.

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**Received:** Oct 15, 2021; **Accepted:** Oct 29, 2021; **Published:** Nov 05, 2021

**Citation:** Wu P, Lin S, Jiao J, Li C (2021) Attention should be paid to the Adverse Reactions of PD-1/PD-L 1 Inhibitors. *Immunotherapy (Los Angel)*.07:180.

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