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Immune Checkpoint Inhibitors and Cardio Toxicity in Cutaneous Oncology

Somsri Wiwanitkit*

Dermatology Department, Trichology Unit, Ramon y Cajal University Hospital, Madrid, Spain

***Corresponding author:** Somsri Wiwanitkit, Dermatology Department, Trichology Unit, Ramon y Cajal University Hospital, Madrid, Spain E-mail: SomsriWiwanitkit@gmail.com

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Description

Immune checkpoint inhibitors are a type of cancer treatment that work by blocking certain proteins on immune cells, called checkpoints, which can prevent the immune system from attacking cancer cells. By blocking these checkpoints, immune checkpoint inhibitors can help the immune system recognize and attack cancer cells more effectively. Immune checkpoints are proteins on the surface of certain immune cells that help regulate the immune response. They act as "brakes" to prevent the immune system from attacking normal, healthy cells in the body. However, cancer cells can take advantage of these checkpoints to evade detection by the immune system. Immune checkpoint inhibitors are drugs that target these checkpoints to help the immune system recognize and attack cancer cells more effectively. By blocking these checkpoints, immune checkpoint inhibitors can release the brakes on the immune system and allow it to mount a stronger attack against cancer cells.

There are several types of immune checkpoint inhibitors that are currently approved for use in the treatment of cancer, including drugs that target the Programmed Death-1 (PD-1) receptor and the Programmed Death Ligand-1 (PD-L1) protein, as well as drugs that target the Cytotoxic T-Lymphocyte-Associated Protein 4 (CTLA-4) receptor.

Some examples of immune checkpoint inhibitors that are currently approved for use in cancer treatment include:

- Pembrolizumab (Keytruda)
- Nivolumab (Opdivo)
- Atezolizumab (Tecentriq)
- Ipilimumab (Yervoy)

These drugs are typically administered intravenously and can be used alone or in combination with other cancer treatments, such as chemotherapy or radiation therapy. While immune checkpoint inhibitors can be effective at treating certain types of cancer, they can also cause side effects, such as fatigue, rash, and diarrhea, as well as more serious side effects, such as autoimmune disorders and organ damage.

Cardio toxicity refers to the damage or dysfunction of the heart muscle that can be caused by certain cancer treatments, including chemotherapy, targeted therapy, and radiation therapy. In cutaneous oncology, cardio toxicity can be a concern in patients receiving certain types of chemotherapy, such as anthracyclines like doxorubicin or epirubicin. The risk of cardio toxicity can depend on several factors, including the type and dose of chemotherapy, the patient's age and overall health, and the presence of other medical conditions. Some of the symptoms of cardio toxicity can include fatigue, shortness of breath, chest pain, irregular heartbeats, and fluid retention. To monitor for cardio toxicity, patients undergoing chemotherapy may have their heart function tested periodically with imaging studies, such as echocardiograms or MUGA scans. If cardio toxicity is suspected, treatment may involve reducing the dose of chemotherapy, switching to a different type of chemotherapy, or using medications to support heart function.

In addition to chemotherapy, some targeted therapies used in cutaneous oncology may also have cardio toxic effects. For example, certain tyrosine kinase inhibitors, such as sorafenib and sunitinib, have been associated with an increased risk of hypertension and heart failure.

Overall, managing cardio toxicity in cutaneous oncology requires close monitoring and coordination between the patient's oncology and cardiology teams, as well as careful consideration of the potential benefits and risks of different treatment options.

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