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Nivolumab Induced Psoriasis Successfully Treated With Acitretin

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INTRODUCTION

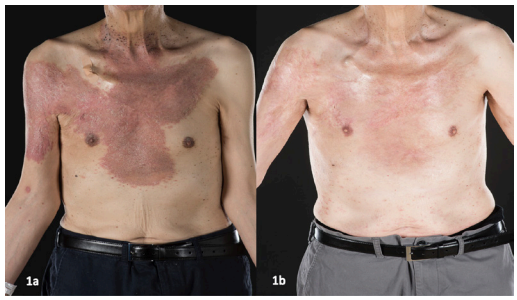
Immunotherapy is emerging as a promising alternative treatment for a variety of solid tumors. Its beneficial effects are mediated through hijacking the immune system to mount an anti-tumor response. One of the mechanisms of increasing anti-tumour immunity is through immune checkpoint blockade. Currently there are several immune checkpoint–directed antibodies approved by the FDA that report increased overall survival. Nivolumab is a IgG4 monoclonal antibody directed against programmed cell death protein 1 (PD-1).[1] By binding to the PD-1 antigen expressed on T cells, Nivolumab inhibits the interaction between PD-1 and its ligand expressed on dendritic cells, macrophages, and cancer cells and thus enhances the anti-tumour effects ofT cells.[2] Despite its favourable oncological outcomes, anti-PD-1 inhibitors as a class of immunomodulators are associated with a unique spectrum of side effects known as immune-related adverse events (irAEs).[3] Among the various known adverse events, psoriasis is well established.[4] For those undergoing cancer therapy, the development of a cutaneous immune adverse event not only poses a threat to ongoing immunotherapy but also quality of life. From a dermatological perspective, the development of psoriasis in this patient cohort is problematic, as treatment options are limited. We report two cases of Nivolumab induced psoriasis successfully treated with oral acitretin.

A 60-year-old gentleman was referred to dermatology outpatients with a cutaneous irAE, which developed after his fourth cycle of Nivolumab, for a new diagnosis of oesophageal carcinoma. When reviewed he had a widespread erythematous, raised, scaly rash in an old scarred area on his anterior chest, abdomen, and right arm consistent with psoriasis (PASI 18.4). Acitretin at a dose of 20mg per day was commenced and after six-weeks, his PASI had reduced to 12.

An additional case of Nivolumab-induced psoriasis mainly affecting the upper limbs was also successfully treated with acitretin in a 73-year-old gentleman diagnosed with renal cell carcinoma. He achieved PASI 90 with the commencement of 20 mg daily, with self-reported improved quality of life, less problematic itch, and interruption to sleep.

Acitretin is an oral retinoid used to treat severe psoriasis and other dermatoses. It is used less frequently now due to the efficacy of newer biologic agents. However, when used alone at a maintenance dosage of 30 mg to 50 mg daily, it is a highly effective treatment. Adverse reactions are dose-related and generally typical of hypervitaminosis A. As acitretin has no immunomodulatory effects in comparison to conventional treatments, it is thus a superior option in conjunction with ongoing treatment with immune checkpoint inhibitors.

FIGURE 1. (A) Psoriatic eruption post Nivolumab treatment. (B) Resolution of psoriatic rash post treatment with acitretin.



To date there are no treatment guidelines for this unique patient cohort and often immunotherapy is ceased in the setting of an acute symptomatic cutaneous adverse event. However, in cases of anti-PD-1 induced or exacerbated psoriasis, we recommend a timely dermatological consult with consideration of acitretin alongside ongoing immunotherapy.

DISCLOSURES

Authors have no conflicts of interest.

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