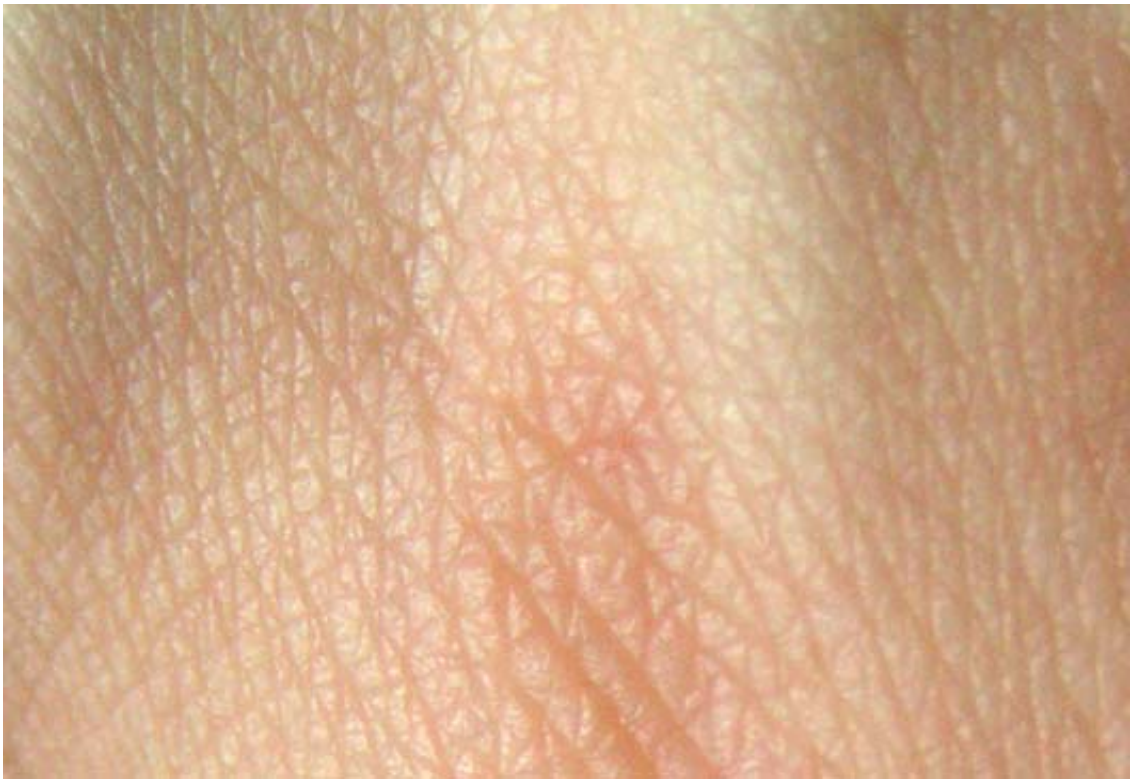
Cancer patients may experience delayed skin effects of anti-PD-1 therapy

July 18 2018



Human skin structure. Credit: Wikipedia

Cancer patients receiving anti-PD-1 therapies who develop lesions, eczema, psoriasis, or other forms of auto-immune diseases affecting the skin may experience those adverse reactions on a delay—sometimes even after treatment has concluded. In a study that provides guidance for physicians and has implications for patient counseling—dermatologists

in the Perelman School of Medicine at the University of Pennsylvania found patients developed skin disease a median of four months after starting treatment, though in one case, the effects were not observed until more than three years later. They published their findings in *JAMA Dermatology* today.

PD-1 is a checkpoint protein on T cells, which are crucial to the immune system's ability to fight off disease. Anti-PD-1 immunotherapies like pembrolizumab (Keytruda) or nivolumab (Opdivo) turn off the checkpoint, leaving T cells free to do their job. The approach has become standard of care in multiple cancers, including lung cancer and melanoma. About 40 percent of patients treated with these therapies will develop auto-immune diseases affecting the skin, which can include eczema, psoriasis, and lupus-like reactions, among others.

"The impact of these treatments on the skin is well documented, but there has been relatively little focus on the timing of these adverse events—a crucial point that can both inform doctors on what to watch for and aid them as they counsel patients on what to expect," said the study's senior author Emily Y. Chu, MD, Ph.D., an assistant professor of Dermatology. Leo L. Wang, BA, MS, a medical student, is the study's lead author.

Researchers compiled data on 17 patients seen at Penn between 2014 and 2018—all of whom had biopsies of their skin reactions. Twelve had melanoma, while three had squamous cell carcinoma and two had renal cell carcinoma. All patients had metastatic disease.

The study showed 12 of the 17 patients experienced skin disease three months or later after beginning treatment with pembrolizumab or nivolumab. The soonest a reaction developed was two weeks, while the longest was 38 months. In five patients, the reactions attributed to the anti-PD-1 therapy developed after the patients were no longer receiving

the drug.

"While we can't definitively say that the skin reactions occurring after treatment was discontinued are linked to the therapies, the reactions we observed are typical of those frequently attributed to anti-PD-1 drugs," Chu said. "We also know that tumor responses are durable even after treatment stops, which is further evidence that skin reactions may also develop during this time."

Chu noted that all of the patients in this study were referred to dermatology by their oncologists. With more oncologists dealing with these common reactions, these symptoms are often addressed during the normal course of treatment, meaning dermatology tends to only see the more severe cases, Chu said.

"Dermatologists need to be aware that these immunotherapies can cause skin reactions with a delayed onset," Chu said. "Patients are living longer, and we need to be prepared to address the long-term effects of the treatments that make that possible."

Provided by Perelman School of Medicine at the University of Pennsylvania