

# Letter to the Editor

## Interaction Between Adalimumab With Concurrent Pregabalin and Duloxetine Administration in a Psoriasis Patient With Diabetic Peripheral Neuropathy

To the Editor:

A 22-year-old woman with type 1 diabetes mellitus and peripheral neuropathy that was well-controlled with pregabalin 200 mg 3 times daily and duloxetine SR (sustained release) 60 mg daily presented with a long history of treatment-resistant psoriasis and psoriatic arthritis. Multiple psoriasis treatment regimens failed, including topical steroids and UVB light therapy, and the patient was not a good candidate for methotrexate or acitretin because of elevated liver enzymes. In addition to severe psoriasis, she reported joint pain in her fingers and hips. On physical examination she was noted to have red, scaly, indurated plaques on her chest, abdomen, bilateral legs, buttocks, and scalp, covering approximately 50% body surface area. She did not have a history of multiple sclerosis, congestive heart failure, lymphoma, hepatitis B, or active infection. After a negative purified protein derivative (tuberculin) skin test, she was started on 80 mg of adalimumab at baseline, followed by 40 mg at week 1 and then 40 mg every other week thereafter. After her third shot of adalimumab, her feet became noticeably more sensitive; after the fourth shot of adalimumab, she developed excruciating pain in her bilateral lower extremities. She was reluctant to stop taking adalimumab because her psoriasis had shown dramatic improvement, but her peripheral neuropathy was now unbearable. The dosage of duloxetine SR was increased to 60 mg twice daily and the pain subsided. The patient has been stable on this regimen for 36 months.

Adalimumab is a human monoclonal antibody that targets tumor necrosis factor  $\alpha$  and has been shown to be highly effective in the treatment of plaque psoriasis.<sup>1</sup> Known drug interactions include a reduced drug clearance of adalimumab in patients taking methotrexate and an increased risk for neutropenia and infection associated with concurrent administration of adalimumab and other tumor necrosis factor blockers or IL-1 antagonists such as anakinra.<sup>2</sup>

The pain associated with diabetic peripheral neuropathy can be crippling and only 2 medications

have been approved by the US Food and Drug Administration for its management, namely pregabalin and duloxetine.<sup>3</sup> The mechanism of action of pregabalin, a structural derivative of  $\gamma$ -aminobutyric acid, is unknown, but its antinociceptive effects are believed to be related to its high-affinity binding to the  $\alpha_2$ -delta site of voltage-gated calcium channels in the central nervous system, thereby reducing the release of several neurotransmitters.<sup>4</sup> Duloxetine is a serotonin and norepinephrine reuptake inhibitor. Serotonin and norepinephrine are involved in the descending inhibitory pain pathways; duloxetine's action on these pathways is thought to restore balance to the endogenous analgesic system and therefore alleviate the persistent pain characteristic of diabetic peripheral neuropathy.<sup>5</sup>

The exact mechanism of interaction between adalimumab and either pregabalin, duloxetine, or a combination of both is unclear but may result in treatment limitations, which should be considered when managing patients with psoriasis and diabetic peripheral neuropathy.

Sincerely,  
Jashin J. Wu, MD  
Kristy F. Fleming, MD

Dr. Wu is from the Department of Dermatology, Kaiser Permanente Los Angeles Medical Center, California. Dr. Fleming is from the Department of Dermatology, Baylor College of Medicine, Houston, Texas.

Dr. Wu is an investigator for Abbott Laboratories and Amgen Inc. Dr. Fleming reports no conflict of interest.

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