

Allergic contact dermatitis caused by rotigotine in a transdermal therapeutic system

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Allergic contact dermatitis caused by transdermal therapeutic systems (TTSs), resulting from the active drug, an adhesive, or an excipient, is rare. We report the first case of allergic contact dermatitis caused by rotigotine, a non-ergolinic dopamine receptor agonist, in a TTS in a patient treated for Parkinson's disease.

Case Report

A 69-year-old patient presented with well-demarcated itchy red plaques with vesicles and secondary

desquamation at the application sites of a rotigotine TTS (Neupro[®] 6 mg/24 h; UCB Pharma, France Colombes) for 3 months, with extension on the neckline and the upper back (Fig. 1). These reactions began 2 weeks after the patient had used this TTS for early signs of Parkinson's disease, with a progressive increase in the dose of rotigotine (initial dose, 2 mg/24 h). The patient changed the application site every day, and did not apply the TTS to the same area of skin more often than once every 14 days, as recommended. Applications of Neupro[®] were stopped, and it was replaced with an oral non-ergolinic dopamine agonist, pramiprexole (Sifrol[®]), with good tolerance.

Later, patch tests were carried out with European baseline series (Chemotechnique Diagnostics, Vellinge, Sweden), sodium metabisulfite present as excipient (2% pet.; Chemotechnique), the placebo TTS, and the pure drug rotigotine, the latter two materials being kindly provided

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Fig. 1. Well-demarcated erythematous plaques with vesicles at the application site of a Neupro® transdermal therapeutic system on the thighs.



Fig. 2. Positive patch test reactions to rotigotine at D3 (2+ with 10% pet.; 1+ with 10% aq.).

by the manufacturer. The application time was 2 days. As recommended by Barbaud et al. to test pure drugs, rotigotine was diluted at 10% pet. and 10% aq. (1). All tests gave negative results, except for rotigotine 10% pet. [2+ at day (D) 2 and D3] and 10% aq. (1+ at D2 and D3) (Fig. 2). Five

controls were negative. The patient applied the placebo TTS once daily at different application sites for 2 weeks, without any reaction.

Discussion

TTSs are increasingly being prescribed instead of oral drugs, because of increased patient compliance and the avoidance of first-pass metabolism and fluctuating plasma concentrations (2). A TTS has three components: (i) an active pharmaceutical drug, (ii) an adhesive, and (iii) penetration-enhancing and possibly other excipients. Allergic contact dermatitis caused by one of these three components is relatively rare (2).

Rotigotine transdermal patches (Neupro®) are used to treat Parkinson's disease and restless legs syndrome. The continued release of the drug through the skin limits the risk of motor complications. The chemical name of rotigotine, a derivative of the 2-aminotetralins, is (6S)-6-{propyl[2-(2-thienyl)ethyl]amino}-5,6,7,8-tetrahydro-1-naphthalenol. The most frequent adverse effects of Neupro® TTS are nausea and vomiting, dizziness, headache, drowsiness, sleepiness, and fatigue. Skin reactions, which are in general transient and with slight to moderate severity, necessitating treatment discontinuation in ~8% of rotigotine-treated patients, occurred more frequently in the higher rotigotine dosage group than in the lower one in clinical trials (3, 4). Most of these reactions were probably irritant reactions, and there is no report of patch testing (2–4).

Our case suggests allergic contact dermatitis caused by rotigotine, for several reasons: (i) extension of the lesions distant from the application sites, (ii) positivity of the rotigotine patch tests and negative results with the placebo TTS in our patient, and (iii) negative results with the rotigotine patch tests in 5 controls.

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