Methylisothiazolinone Potentially Induces Contact Allergy

A preservative containing only methylisothiazolinone (MI) has recently been introduced in the EU for use in several products, including cosmetics. However, assessment of MI-induced contact allergy has been limited. The authors of this paper show that careful monitoring is needed to determine whether or not this antimicrobial is safe to use in cosmetics.

Below is a summary of a recent paper by Ackermann et al. The full reference for this article is: *Ackermann L, Aalto-Korte K, Alanko K, Hasan T, Jolanki R, Lammintausta K, Lauerma A, Laukkanen A, Liippo J, Riekki R, Vuorela A-M, Rantanen T. Contact sensitization to methylisothiazolinone in Finland – a multicentre study. Contact Dermatitis 2010; 64, 49–53.*

An increase in contact allergy prevalence rate to 3–8% was observed in Europe following the introduction of a mixture of methylchloroisothiazolinone and methylisothiazolinone (MCI/MI; Kathon CG) as an antimicrobial agent. After the use of MCI/MI was reduced at the beginning of the 1990's, MCI/MI-induced contact allergy declined, with recorded prevalence rates in patch-tested patients in European centres being 1–3%. MI has recently been approved in the EU for use on its own in several products.

Ackermann and colleagues carried out a survey based on the patch test results of eight Finnish dermatology clinics (at university hospitals (five), a central hospital, a private medical centre, and the Finnish Institute of Occupational Health) over a period of 3 years (2006–2008). In total, 10,821 patients were patch-tested with 0.1% (1,000 ppm) and 0.03% (300 ppm) MI. Of these patients, 1.4% and 0.6% showed positive patch test reactions to 0.1% and 0.03% MI, respectively. Sixty-six percent of the patients who reacted to MI also reacted to MCI/MI, whereas 34% did not. Thirty-three of the 62 patients with positive reactions to MI during 2008 underwent a provocative use test. Ten of these (30%) gave positive results (6 reacting to 0.03% MI in patch tests and 4 only to 0.1% MI). Patients who produced reactions in the provocative use test also reacted to MCI/MI in patch tests.

The authors speculate that it is possible that the higher concentration of MI tested (0.1%) could cause irritant reactions as 34% of patients who reacted to MI did not react to MCI/MI. They further consider that it is equally possible that some of the MCI/MI-allergic patients may have been missed because of the low MCI/MI concentration used (100 ppm).

MI may be used at concentrations up to 100 ppm. The provocative use test was conducted using 100 ppm MI, confirming the relevance of the positive patch tests for MI. The authors conclude that contact allergy to MI occurs in the eczema patient population and that it is important to monitor allergic contact sensitization to the most widely used antimicrobials.

The first author of the study, Leena Ackermann, is a dermatologist at Helsinki University Central Hospital. The study was a multicentre study conducted by the Finnish Contact Dermatitis Group.

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