

Sensitisation to the Preservatives Methylchloroisothiazolinone/Methylisothiazolinone and Methylisothiazolinone

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ABSTRACT

Introduction: Methylchloroisothiazolinone/methylisothiazolinone (MCI/MI) and methylisothiazolinone (MI) are commonly used preservatives in water-based products to prevent microbial overgrowth. They are used in cosmetics, household cleaning products and in industrial products such as paints, cutting oils etc. Allergic reactions to MCI/MI resulted in the maximum concentration used in products being legislated in Europe. However, the concentration of MCI/MI in industrial products and household cleaning products is not regulated and there are no labelling requirements. MI was introduced as a preservative on its own and since its introduction; reactions to this preservative are increasing.

Methodology: Data from the Occupational Dermatology Clinic at the National Institute for Occupational Health (NIOH), South Africa, was analysed to determine the prevalence of sensitisation reactions to MCI/MI and MI.

Records of 829 referrals to the NIOH clinic between 2006 and 2018 were retrospectively reviewed. MCI/MI and MI sensitised cases were identified as patients with a positive patch test to MCI/MI and/or MI.

Results: Of 590 patients tested with MCI/MI, 30 had positive reactions (5.3%; 30/590). Initially MCI/MI was tested at a 0.01% solution but was then increased to 0.02% in 2015 and positive reactions increased from 4.7% to 6.2%. Sensitisation to MI (0.2%) (introduced in July 2014) alone occurred in 17.9% (15/84), with 8.3% (7/84) reacting to both MI and MCI/MI. Since the introduction of MI, 13.2% (31/234) of patients tested with these preservatives were sensitised to either MCI/MI and/or MI.

Conclusion: Sensitisation to MCI/MI and MI was shown to increase over the years. Although patch testing with more sensitive reagents may contribute to this, the number of patients sensitised to the two preservatives increased, in-line with international studies. The concentration of these preservatives in industrial and homecare products needs to be reduced and properly labelled. The concentration for testing is important to prevent false positive/negative reactions.

Keywords: Methylchloroisothiazolinone/methylisothiazolinone, Methylisothiazolinone, Preservatives, Patch testing, Allergy, Cosmetic, Coolants

ABBREVIATIONS

MCI/MI: Methylchloroisothiazolinone/methylisothiazolinone; MI: Methylisothiazolinone; NIOH: National Institute for Occupational Health

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