

Further evidence of the methylisothiazolinone epidemic

Jakob Torp Madsen and Klaus Ejner Andersen

Department of Dermatology and Allergy Centre, Odense University Hospital, University of Southern Denmark, Sdr. Boulevard 29, DK-5000, Odense C, Denmark

doi:10.1111/cod.12217

Key words: allergic contact dermatitis; cosmetics; epidemiology; occupational; patch test.

Methylisothiazolinone (MI) appears to be causing a current epidemic of allergic contact dermatitis in Europe (1–4). We report patch test data of patients patch tested with MI from 2011 to 2013, including methylchloroisothiazolinone (MCI)/MI, at the Department of Dermato-venerology, Odense University Hospital.

Consecutive eczema patients were patch tested with MCI/MI 4 µg/cm², MCI/MI 0.02% pet., MI 0.2% aq. or MI 0.02% aq. were retrospectively analysed, and the allergen source was identified if stated in the medical record. Multiple contact allergies were noted for each patient. The patch tests were applied on the back for 2 days, and routinely read according to the International Contact Dermatitis Research Group scoring scale on D3/4 and D6/7. MI was not tested in 2010.

From 2011 to 2013, 1511 patients were patch tested with MI 0.02%, and 1655 were patch tested with MI 0.2%. The prevalence of positive reactions to MI (0.2%) increased from 4.8% (2011) to 6.5% (2013). A similar increase was seen for MI 0.02% and MCI/MI (Table 1). Ninety-six patients had a positive reaction to at least one of the four MI-containing test substances, and relevant

Table 1. Prevalence of reactions to methylchloroisothiazolinone (MCI)/methylisothiazolinone (MI) 4 µg/cm², MCI/MI 0.02%, MI 0.02% and MI 0.2% tested in consecutive eczema patients at the Department of Dermato-venerology from 2011 to 2013

Year	2011	2012	2013
MCI/MI 4 µg/cm ²	4.3	3.7	5.3
MCI/MI 0.02%	5.1	5.0	6.3
MI 0.02%	3.5	2.6	3.8
MI 0.2%	4.8	4.4	6.5

Table 2. Clinically relevant sources of exposure to methylisothiazolinone or methylchloroisothiazolinone in patients patch tested at Odense University Hospital from 2011 to 2013

	Exposure					Missing information
	Cosmetics	Cleaning agents	Paint	Airborne	Baby wipes	
No.	43	7	14	12	1	46
%	45	7	15	14	1	48

exposures were identified in 52% of the cases; 43% of these were from cosmetics, 7% from cleaning agents, 14% from paint, and only 1% from wet wipes (Table 2).

Fifty per cent of patients had multiple contact allergies (three or more positive reactions). Nine of 96 (9%) of these cases were considered to be occupationally related (5 painters). Forty-nine patients (51%) had hand eczema,

Correspondence: Jakob Torp Madsen, Department of Dermatology and Allergy Centre, Odense University Hospital, Sdr. Boulevard 29, Entrance 141 or 142, 2nd floor, 5000 Odense C. Tel: +45 65412700; Fax: +45 66123819. E-mail: jakobtorp@gmail.com

Conflicts of interest: The author states that no conflicts of interest exist.

Table 3. Pattern of patch test reactions to methylisothiazolinone (MI) and methylchloroisothiazolinone (MCI) [no. (%)] in patients patch tested at Odense University Hospital from 2011 to 2013

Single MI allergy	12/96 (13)
Single MCI/MI allergy	22/96 (23)
Positive for both MI and MCI/MI	59/96 (61)
Not tested with one of MI or MCI/MI	2/96 (2)

and 37 (39%) had face eczema. Fifteen patients had positive MI reactions related to paint, of which 5 were occupational (painters), and 11 had face eczema, which was considered to result from airborne exposure. Four of the patients with paint-related MI dermatitis were allegedly sensitized from cosmetics.

Sixty-one per cent of patients had positive patch test reactions to both MCI/MI and MI, 23% had positive reactions to CMI/MI alone, and only 13% had positive reactions to MI alone (Table 3).

Discussion

These data provide further evidence for the increasing MI epidemic throughout the last couple of years, as reported from several European countries. The data also suggest that patch testing with MI alone is mandatory to identify MI-sensitized individuals, as illustrated by the 61% of positive patch test reactions to both MCI/MI and MI, and the relatively low number (23%) of single MCI/MI allergies. The MI-sensitizing agent was mostly found in cosmetics used by the patients, but paint also plays a significant role (5–8).

References

- 1 Urwin R, Wilkinson M. Methylchloroisothiazolinone and methylisothiazolinone contact allergy: a new 'epidemic'. *Contact Dermatitis* 2013; **68**: 253–255.
- 2 Mcfadden J P, Mann J, White J M, Banerjee P, White I R. Outbreak of methylisothiazolinone allergy targeting those aged ≥ 40 years. *Contact Dermatitis* 2013; **69**: 53–55.
- 3 Lundov M D, Opstrup M S, Johansen J D. Methylisothiazolinone contact allergy – a growing epidemic. *Contact Dermatitis* 2013; **69**: 271–275.
- 4 Goncalo M, Goossens A. While Rome burns: the epidemic of contact allergy to methylisothiazolinone. *Contact Dermatitis* 2013; **68**: 257–258.
- 5 Thyssen J P, Sederberg-Olsen N, Thomsen J F, Menné T. Contact dermatitis from methylisothiazolinone in a paint factory. *Contact Dermatitis* 2006; **54**: 322–324.
- 6 Lundov M D, Friis U F, Menné T, Johansen J D. Methylisothiazolinone in paint forces a patient out of her apartment. *Contact Dermatitis* 2013; **69**: 252–253.
- 7 Kaae J, Menné T, Thyssen J P. Presumed primary contact sensitization to methylisothiazolinone from paint: a chemical that became airborne. *Contact Dermatitis* 2012; **66**: 341–342.
- 8 Lundov M D, Mosbech H, Thyssen J P, Menné T, Zachariae C. Two cases of airborne allergic contact dermatitis caused by methylisothiazolinone in paint. *Contact Dermatitis* 2011; **65**: 176–179.