

Short Communication

Allergic contact dermatitis from 2-bromo-2-nitropropane-1,3-diol in Metrogel®

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Key words: allergic contact dermatitis; antimicrobials; biocides; 2-bromo-2-nitropropane-1, 3-diol; medicaments; Metrogel®; preservatives. © Munksgaard, 2002.

Accepted for publication 16 October 2001

2-Bromo-2-nitropropane-1,3-diol (Bronopol) is an antimicrobial widely used as a preservative, primarily in cosmetics formulation. It is also the preservative in Metrogel® (metronidazole 0.75% in an aqueous gel) used topically in the treatment of rosacea.

Case Report

A 59-year-old-woman with an 8-year history of rosacea presented with a florid eczema of the face, particularly the forehead, and upper eyelids. There was also a diffuse eczema on the base of the neck anteriorly but the rest of her skin was clear. Her rosacea had previously been treated with oxytetracycline and dietary restriction with good response, but recently there had been no such response. Her current treatment was topical metronidazole gel (Metrogel®) and aqueous cream.

Patch testing was performed to the European standard series, a face series, hair dye and an acrylics series, plus her own nail glue and cosmetics. A (++) reaction to 2-bromo-2-nitropropane, 1–3-diol was seen at D4. A (+) reaction at the site of an open patch test was seen to her own nail glue (a cyanoacrylate). She was treated successfully with topical corticosteroids, stopping the metronidazole gel and discontinuing the use of artificial nails.

Discussion

2-Bromo-2-nitropropane-1,3-diol is an odourless, colourless formaldehyde-releasing preservative primarily used in cosmetics and less commonly in medicament creams. It is active against gram-positive and gram-negative bacteria, yeasts and fungi and particu-

larly effective against *Pseudomonas aeruginosa*. There have been many reports of allergic contact dermatitis from 2-bromo-2-nitropropane-1,3-diol (1–4), but as far as we are aware, there have been no published reports identifying metronidazole gel as a cause. Although cyanoacrylates might not be thought to induce contact allergy as they rapidly polymerize, there may have been a possible contribution to her condition by eczematous contact dermatitis from her nail glue, in view of the positive open patch test.

2-Bromo-2-nitropropane-1,3-diol is not a common allergen and generally contact allergy results from cosmetics. Preservative allergy from medicaments is well recognized but it is uncommon except when associated with varicose skin disorders of the lower legs (5).

Newer preservatives, in particular formaldehyde-releasers, may be incorporated into medicaments, e.g. quaternium-15 in Oilatum® cream (6) and imidazolidinyl urea in Cutivate® cream, and therefore contact allergy from this source should not be overlooked.

References

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