

CORRESPONDENCE

Life-threatening anaphylactic shock due to skin application of Chlorhexidine

Since the introduction of Chlorhexidine, various hypersensitivity reactions to this agent, including contact dermatitis, photosensitive dermatitis, fixed drug eruption, contact urticaria, occupational asthma and immediate hypersensitivity reactions, including severe anaphylactic shock [1–3], have been described.

A 20-year-old man in good general health and with no history of atopy or allergy to drugs disinfected a 2 × 2 cm wound with a solution containing 0.05% Chlorhexidine and 0.01% Benzoxonium chlorid. Within 2 min a generalized urticaria developed, followed by loss of consciousness. The emergency doctor found him in shock with no detectable blood pressure, tachycardia, diarrhoea and urine incontinence. After resuscitation he made a good recovery; 1 week later he applied a cream containing 0.5% Chlorhexidine and again he developed a generalized urticaria almost immediately. He was referred to our Allergy Unit for further investigations. Skin-prick tests with Chlorhexidine in concentrations down to 0.005% and a lymphocyte stimulation test (stimulation index of 4.9) were positive. No reactions to Benzoxonium and to the other components of the cream were observed. Ten healthy volunteers failed to react with Chlorhexidine in a concentration of 0.05%.

To our knowledge this is the first reported case, in which a life-threatening anaphylactic shock occurred after an application of 0.05% Chlorhexidine to the skin. Okano [1] and other authors reported life-threatening reactions only when Chlorhexidine was applied to mucous membranes [2], while strong allergic reactions were reported rarely when Chlorhexidine was applied to the skin and only when in concentrations higher than 0.05%. Evans [3] recently reported an anaphylactic reaction after application of a dressing containing 0.5% Chlorhexidine on a burn. In 1984 the Japanese

Ministry of Welfare recommended that the use of this substance on mucous membranes be prohibited. On account of these observations in the reference book *Meyler's Side-Effects of Drugs* [4] it is stated: 'Application of Chlorhexidine on wound surfaces appears to be safe, but it should be used at the lowest bactericidal concentration of 0.05%.'

Our case demonstrates that Chlorhexidine may have a very strong sensitization potential and that life-threatening anaphylactic shock can occur even if the product is applied to the skin in the recommended concentration of 0.05%. In view of the worldwide and enormous use of Chlorhexidine, we would like to call attention again to the risk of this antiseptic causing anaphylactic reactions.

References

- 1 Okano M, Nomura M, Hata S, Okada N et al. Anaphylactic Symptoms due to Chlorhexidine Gluconate. *Arch Dermatol* 1989; 125:50–2.
- 2 Mitchell DJ, Parker FC. Anaphylaxis following urethral catheterisation. *Br J Urol* 1993; 71:613.
- 3 Evans RJ. Acute anaphylaxis due to Chlorhexidine acetate. *BMJ* 1992; 304:686.
- 4 *Meyler's Side Effects of Drugs. An Encyclopedia of Adverse Reactions and Interactions*. 12th edn. Elsevier, Amsterdam, 576–9.

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