Anaphylactic shock induced by intraurethral use of chlorhexidine

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within normal limits. Kidney and liver function tests were considered to be normal.

A tentative diagnosis of serum sickness-like illness due to lamotrigine was made, and intravenous methylprednisolone 1 mg/kg was started and lamotrigine gradually discontinued. On day 7 of methylprednisolone therapy, the rash faded and disappeared, and the fever subsided. After 2 weeks of hospitalization, the patient was discharged while on vigabatrin and valproic acid combination therapy. Twenty days later, he underwent placebo-controlled oral rechallenge at the clinic with a starting dose of 50 mg lamotrigine given in four divided doses. On day 1, he did not have any reaction. On day 2, after 2 h, the cumulative dose of 75 mg was reached, and he developed an increasing urticarial rash with pruritus of face, chest, hands, and legs. However, hypotension, angioedema, and wheezing did not develop. Since many drugs associated with serum sickness might lead to the development of anaphylaxia, we immediately stopped the challenge.

A case of serum sickness-like disease associated with lamotrigine.

The occurrence of urticarial rash, high fever, and generalized lymphadenopathy 3 weeks after the start of the lamotrigine therapy; the regression of the symptoms with discontinuation of the drug and with methylprednisolone therapy; and, finally, the dose-related rash observed during the challenge test proved that our patient had serum sickness-like disease induced by lamotrigine. Currently, nonprotein drugs appear to be the most common cause of serum sickness-like reactions (2). Recently, a 36-year-old epileptic man was reported, after lamotrigine 300 mg/day add-on therapy, to have severe hypersensitivity syndrome with febrile maculopapuler exanthema, edema of the face, desquamation of the distal extremities, generalized lymphadenopathy, and hepatomegaly (3). He was treated with oral corticosteroids, and later developed transient alopecia and onychodystrophy. The lymphocyte transformation test with lamotrigine was twice positive in this patient. Along with the patient with hypersensitivity defined above, our patient presents further conclusive proof of the severe hypersensitivity syndrome or serum sickness-like illness induced by lamotrigine, especially as monotherapy. Although the most common side-effect of lamotrigine is rash, close monitoring of such patients is necessary.

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Accepted for publication 17 March 1999

ISSN 0105–4538

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Anaphylactic shock induced by intraurethral use of chlorhexidine

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Key words: anaphylactic shock; chlorhexidine; drug allergy; hypersensitivity.

• Although the antimicrobial properties of chlorhexidine gluconate are well known, few clinicians know that chlorhexidine has been associated with hypersensitivity reactions such as anaphylactic shock, a rare but life-threatening complication. As chlorhexidine is now widely used, the reporting of a well-documented case of anaphylactic shock caused by this drug should be of interest to practicing physicians.

A 64-year-old man with a history of dysuria was scheduled for transurethral resection of the prostate (TURP). His medical history was remarkable for the presence of recurrent eczema of the face. One year before, he had experienced two episodes of malaise and macular rash during urethral dilation and cystoscopic examination performed under local anesthesia. A case of lidocaine hypersensitivity was suspected. Therefore, general anesthesia was preferred for TURP in order to avoid lidocaine use. Anesthesia was induced by propofol, and tracheal intubation was facilitated with vecuronium. Eighty minutes later, the patient developed macular rash with severe hypotension (systolic blood pressure: 70 mmHg). A hypersensitivity reaction was diagnosed, and the patient responded promptly to intravenous administration of epinephrine (1:1000, 1 ml), hydrocortisone (100 mg), and saline fluid. The patient was kept under observation for 2 days and made a complete recovery.

Blood analysis revealed a significant increase in tryptase concentration of 68.3 mg/l (reference level: <12.5 mg/l), reflecting activation of the mast cells. Other laboratory results were as follows: hematocrit 43.5%, white blood cell count 7470/μl (eosinophils 6%), platelets 239 000/μl, and total IgE antibodies 199 UI/ml (<100 UI/ml). As no lidocaine was used during TURP, a reaction to latex or to anesthesia agents was suspected. *In vivo* and *in vitro* tests were performed with the substances associated with the period of anesthesia: vecuronium, propofol, and latex. Cutaneous sensitivity was evaluated by skin prick testing and intradermal testing; vecuronium was tested at a dilution of 4 mg/ml for the prick test, and 40, 4, and 0.4 mg/ml for the intradermal test. Histamine acid phosphate and 0.9% normal saline were used as positive and negative cutaneous test controls, respectively. The response to these

drugs was negative. Latex, vecuronium, and propofol-specific IgE antibodies were negative. We also performed a provocative test with latex (wearing of a glove for 2 h) and with lidocaine (subcutaneous injection of lidocaine 2% up to a cumulative dosage of 5 ml). The patient had no reaction to either substance. Finally, chlorhexidine was suspected, because a gel containing 0.05% chlorhexidine gluconate solution (Endosgel™, and Instillagel™, ALMED) was introduced intraurethrally in all urologic procedures. The prick test showed an immediate strong positive response to chlorhexidine gluconate (0.0005%) with a stronger delayed reaction 6 h later. Moreover, chlorhexidine-specific IgE antibodies were demonstrated (Laboratory CERBA, Paris, France).

Chlorhexidine, a widely used antiseptic, may cause life-threatening anaphylactic shock, even when introduced intraurethrally.

To our knowledge, this is the first published case of allergy to chlorhexidine with recurrent episodes of anaphylactic reactions after intraurethral exposure. The most severe, life-threatening reactions during TURP may be induced by the release of chlorhexidine into the surrounding tissue or blood during the surgical procedure.

Only a few reports of severe allergic reactions related to chlorhexidine use have been well documented (1–5). Chlorhexidine is widely used as an antiseptic in mouthwashes, skin ointments, antiseptic-coated central venous catheters, and gels for urologic procedures. Life-threatening reactions are generally associated with mucosal or parenteral exposure (2), whereas cutaneous exposure usually leads to contact allergic dermatitis (3). Anaphylactic shock is probably underreported. In view of the worldwide use of chlorhexidine, we would like to call attention to the risk associated with the use of this antiseptic.

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Accepted for publication 17 March 1999

ISSN 0105–4538

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Allergy to storage mites

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Key words: allergic diseases; house-dust mites; specific IgE; storage mites.

● In recent years, there has been an increasing interest in the allergenicity of storage mites, and there is evidence that sensitization to their allergens is not limited to individuals with occupational exposure (1, 2) as first thought. The purpose of this study was to evaluate the prevalence of sensitization to *Lepidoglyphus destructor* (Ld), *Glycyphagus domesticus* (Gd), *Acarus siro* (As), and *Tyrophagus putrescentiae* (Tp) in patients with positive skin tests to *Dermatophagoides* house-dust mites in the Spanish environment.

The patients selected for this study were those attending our department for the first time in the year 1992 due to rhinitis and/or bronchial asthma and with positive cutaneous tests to *Dermatophagoides* mites (*D. pteronyssinus*, *D. farinae*). We studied 133 patients, 69 males (51.88%) and 64 females (48.12%), aged 17.4+10.6 years (range, 7–81 years). The patients were diagnosed with rhinoconjunctivitis (48.29%), rhinoconjunctivitis and asthma (34.03%), and asthma (17.68%) by assessment of clinical history. They were not occupationally exposed to storage mites and came as often from rural as urban environments.

All the patients had positive skin prick tests to *D. pteronyssinus* (Dp) 100 BU/ml and/or *D. farinae* (Df) with 100 BU/ml extracts (ALK-Abelló). The cutoff for a positive skin test was defined as a wheal at least similar to the histamine control and 3 mm larger than the saline control.

Specific IgE antibodies to the mites Dp, Df, As, Gd, Ld, and Tp were measured by the Pharmacia CAP System RAST FEIA (Pharmacia & Upjohn Diagnostics, Uppsala, Sweden) according to the manufacturer's instructions. The results were expressed in kU/l and were classified by the CAP System RAST FEIA reference (classes 0–6). Values greater than class 1 were considered positive.

Statistical analysis was as follows. Correlation coefficients of Pearson (r) between positive CAP scores were calculated to estimate the strength of the relationships between the different species of storage mites and *Dermatophagoides* mites. From these tests, a P value was obtained and considered significant if it was below 0.05.

Ninety-eight of the 133 patients allergic to *Dermatophagoides* had positive specific IgE against at least one of the storage mites (73.6%). Ld was the most frequently detected storage mite (68.42%). Less positive CAP results were obtained for Tp (64.66%), Gd (57.14%), and As (48.12%).