

LETTER TO THE EDITOR

The case of a child with contact urticaria due to sodium benzoate treatment

To the Editor,

Sodium benzoate (SB) is an additive typically used in the food industry for colouring, sweetening, and antimicrobial effects, whereas in the pharmaceutical industry it is often used as a preservative (eg, in cough syrups, vitamin preparations, heparins, and antibiotic syrups).¹ In addition, SB is a basic medication for certain paediatric metabolic diseases; for example, in urea cycle defects, SB is used to decrease ammonia.²

A variety of immunoglobulin E and non-immunoglobulin E-mediated reactions from SB have been reported in the literature. Although urticaria, asthma, and anaphylaxis may rarely occur, allergic contact dermatitis and urticarial skin reactions are more commonly reported.^{3,4} However, data on the existence of such skin reactions in children are rare, and only poorly documented by skin and/or provocation tests.

Herein, we present the case of a child with an acute facial rash due to skin contact with an SB-containing drug. A nonatopic, 5-year-old girl received SB treatment (500 mg/5 mL, oral solution) due to a urea cycle defect, and developed a new-onset facial rash on the fourth day of treatment. History revealed that she did not want to swallow the drug, but rather spit it out, thereby smearing the medication over her face and neck. Within 5 minutes she developed facial redness, accompanied by burning and itchy sensations. Physical examination showed flat, pink, hyperaemic skin lesions on the cheeks, forehead, and neck (Figure 1). The lesions disappeared after 40 minutes without any treatment. The patient's parents were instructed to avoid skin contact with the drug, and the girl was able to continue the oral intake of the remaining SB doses without any further skin reactions and systemic reactions. During follow up, an SB-impregnated cotton (using the oral form of the drug) was applied on the volar face of her forearm, which induced a macular rash within 30 minutes.

According to the literature, products containing SB—such as make-up cleaning wipes, cosmetics, sanitary pads, toys, lotions, and toothpaste—may cause allergic contact dermatitis and/or contact urticaria.^{5–7} Reports of urticaria, angioedema, rhinitis, asthma, and even anaphylactic shock following oral intake or inhalation of SB are considered rare.⁸ Michils et al⁴ reported the case of a 19-year-old adult who developed anaphylaxis from SB-containing cheese. In another adult patient case, perennial rhinitis, confirmed by a placebo-controlled provocation, was detected and related to SB-containing wine and cheese.⁹ SB-induced pruritus may also develop due to its use as a food additive.¹⁰ In the present case there was no systemic reaction following oral SB intake, but only an acute,



FIGURE 1 Pink, flat, and hyperaemic areas on the cheeks, forehead, and neck following accidental skin exposure to a sodium benzoate (SB)-containing drug

transient, urticarial face rash, likely indicating nonimmunologic contact urticaria.

A further work-up with additional patch and prick tests was planned, but could not be performed due to an imbalance in the patient's metabolic status. Our patient has an important metabolic disease that could become life-threatening if SB treatment were to be discontinued. Therefore, we emphasize the importance of a timely recognition of isolated contact urticaria to SB-containing drugs upon contact with the skin, which does not automatically mean they can no longer be used orally. This way, unnecessary elimination, and/or the use of alternative (potentially lesser effective) drugs, can be avoided.

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KEYWORDS

case report, child, drug allergy, sodium benzoate

CONFLICTS OF INTEREST

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AUTHOR CONTRIBUTIONS

Zeynep Şengul Emeksiz: Conceptualization; writing-original draft; writing-review & editing. **Serap Özmen:** Conceptualization; writing-original draft; writing-review & editing.

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