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Skin test after anaphylaxis to sugammadex

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Letter to the Editor

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We read the case report titled 'Anaphylactic shock after sugammadex administration, induced by formation of a sugammadex-rocuronium complex by Kim et al. [1] with great interest. As a result of their effective treatment, the patient fortunately, recovered. To find the causative agent of anaphylactic shock, the authors performed skin tests four days after anaphylaxis. However, it is recommended that skin testing is conducted at least four to six weeks after the occurrence of a suspected perioperative allergic reaction [2]. This time interval allows for the resolution of clinical symptoms and clearance of the suspected drugs and anti-allergic medications [3]. Skin tests performed earlier than this can result in a negative reaction due to mediator depletion after anaphylaxis. When tests are performed earlier than four weeks, only positive skin test results are useful and a negative skin test needs to be interpreted with caution. Therefore, the authors' skin test was done too early and there is doubt about its reliability.

Generally, appropriate positive and negative controls are always necessary in skin tests for suspected hypersensitivity reactions to confirm skin reactivity [4]. Usually, histamine is used as a positive control and saline as a negative control. Unfortunately, the authors did not include a positive control in their test. If the patient had shown a negative response to histamine, the patient's negative response to sugammadex should be a false result.

Certain drugs also decrease skin test responses and must be discontinued prior to a skin test. Antihistamines and glucocorticoids fall into this category. Five days of drug-free intervals after H1-antihistamines and three days after less than 50 mg of short-term prednisolone equivalent are recommended because those drugs can decrease skin test reactivity [4]. Whether short and long-term systemic corticosteroids need to be stopped prior to testing is controversial [5]. The authors administered 60 μg/kg of dexamethasone and 50 μg/kg of chlorpheniramine after anaphylaxis. In addition to the skin test performed too early, drugs decreasing skin reactivity might have contributed to the negative response to all drugs.

If testing is performed earlier than four to six weeks, repeat testing after four to six weeks may be considered. In the case of negative skin test results, a second evaluation is advisable. The authors performed a skin test to sugammadex- rocuronium complex after a month. If the authors performed a skin test for sugammadex again with the sugammadex-rocuronium complex, the results would have been very clear. In our opinion, the interpretation of skin tests in this report was not complete because the skin tests did not meet the conditions of adequate timing after anaphylaxis and the appropriate use of positive and negative controls.

Presently, there are no established guidelines for skin testing for anaphylaxis to sugammadex. The reported allergenic epitopes were sugammadex, gamma-cyclodextrin, or sugammadex-rocuronium complex. Accurate skin tests using positive and negative controls at the right time will be helpful to identify the allergenic epitopes of sugammadex.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

Author Contributions

Sung Jin Hong (Conceptualization; Investigation; Supervision)
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