Drug-induced intradermal test-related fatal anaphylaxis

– appeal to comply with available guidelines

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Key message: Skin testing with drugs is associated with a risk of severe anaphylaxis and precautions have to be considered

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There has been a report on a fatal anaphylactic reaction after skin testing with ceftriaxone in Allergy Net, which necessitates to emphasize some general principles concerning skin tests with drugs (1). A 59-year-old man with chest and abdominal trauma was admitted to the emergency department. The patient’s wife reported a previous allergic reaction to ceftriaxone 1 month before. An intradermal skin test with an undetermined concentrated ceftriaxone solution was performed. Five minutes after the injection, the patient experienced severe anaphylaxis with consecutive respiratory failure and died after delayed application of adrenaline.

Skin testing is associated with well-known risk of severe anaphylactic reactions (2). Betalactam antibiotics are one of the most important elicitors of severe or fatal reactions to skin testing (2). Thus, when diagnosing patients with suspected betalactam hypersensitivity, physicians have to 1) know about the risk involved and 2) take appropriate precautions. In order to harmonize diagnostic procedures, the European Network on Drug Allergy, which is the basis of the Drug Hypersensitivity Interest Group of the EAACI, has proposed guidelines on how to perform skin testing in general (3), and on how to test patients with suspected betalactam hypersensitivity specifically (4). Unfortunately, these guidelines were not followed in the described case. It thus appears necessary to highlight important aspects detailed in these guidelines. First, the exact type and severity of the allergic reaction in the history should have been determined. Second, it remains unclear, why the treatment was not done with an unrelated antibiotic of a different non-betalactam class and why the test procedure was not postponed. It is always an excess risk to test a patient outside the routine setting, where one is prepared and knowledgeable about possible side effects. Third, before performing an intradermal test, a skin prick test should be done as recommended (3,4). Only if this is negative after 15–20 min, an intradermal test can be performed for higher sensitivity. Fourth, when testing patients with higher risk (e.g. severe previous reaction, unstable condition), a careful risk-benefit analysis as well as initial testing with higher dilutions and
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slow titration until regular test concentrations (for ceftriaxone: 2mg/ml) have been recommended (3, 4). It remains unknown, which concentration has been initially used in the described patient. Finally, emergency treatment has to be readily available and the staff has to be experienced with the treatment of such reactions, which appears questionable in the described case considering adrenaline was given 15 minutes later. If experience with skin testing and emergency treatment can not be guaranteed, the patient should have been sent for testing to a different referral center later. The described case had medicolegal consequences; the judge considered the physician negligent in the test procedures and in emergency treatment. This may have been avoided by a better knowledge of and by complying with available guidelines.

References


