

# Prevention and Treatment of Possible Adverse Reactions Including Anaphylaxis, During Allergic Examination

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Allergy specialists deal with various allergic diseases, such as bronchial asthma, allergic rhinitis, food allergy, drug hypersensitivities and so on. To unmask these allergic diseases, we quite often have to face the irony of challenging the culprit allergen to the patient to prove what we think is right.

Skin prick test (SPT) is the first-line diagnostic method of demonstrating an IgE-mediated hypersensitivity, especially for inhalant allergens. It is generally considered a safe procedure and the frequency of systemic reactions caused by extracts of inhalant allergens is extremely low, whereas it is slightly increased if food, latex, drug or hymenoptera venom extracts are used.<sup>1</sup> The available literature suggests that the overall risk of inducing anaphylactic reactions by SPT is less than 0.02%.<sup>2</sup> Intradermal testing is known to induce systemic reactions more frequently than SPT, especially when performed with drugs.<sup>3</sup> Physicians and allied health professionals have to 1) know about the risk involved and 2) take appropriate precautions. There has been an effort to harmonize diagnostic procedures by the European Network on Drug Allergy to propose guidelines on how to perform skin testing in general,<sup>4</sup> and the specific principles will be reviewed in the session.

Next is the bronchial challenge test, with which we demonstrate bronchial hyperreactivity to diagnose asthma. The most frequently used challenges are methacholine and physical exercise and in 2000 ATS provided a statement on practical guidelines for safe and precise examinations.<sup>5</sup> Inhaled methacholine causes bronchoconstriction, therefore, safety of both patients and technicians should be considered. In any circumstances, medical staff trained to treat acute bronchospasm and use resuscitation equipment must be present close enough to respond quickly to an emergency. Medications to treat severe bronchospasm must be present in the testing area, which include epinephrine and atropine for injection and albuterol and ipratropium in metered-dose inhalers or nebulizer. Physicians and technicians should be aware of those contraindicated to these challenge tests; severe airflow limitation ( $FEV_1 < 50\%$

predicted or <1.0 L), heart attack or stroke in last 3 months, uncontrolled hypertension, and known aortic aneurysm.

Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) are the most common causes of adverse drug reactions, which present as either aspirin-induced bronchial asthma/rhinosinusitis or urticarial/angioedema. Diagnosis relies on oral, bronchial and nasal provocation tests since in vitro tests and skin tests do not hold diagnostic value. The EAACI/GA2LEN guideline on aspirin provocation test proposed contraindications for the tests and the principles of drug withdrawal and equipment were reviewed.<sup>6</sup> Oral aspirin challenge is contraindicated for those with history of very severe anaphylactic reactions by aspirin or other NSAIDs, severe disease of the heart, infection of respiratory tract within 4 weeks prior to challenge, pregnancy and current treatment with  $\beta$ -receptor blocker. Patient supervision is mandatory after oral and inhalation challenge especially in case of a positive reaction.

It is always important to know about the risks of fatal adverse events following the challenge tests we are performing, be equipped with emergency kits to treat bronchoconstriction and anaphylactic shock and be ready to give the medications yourself.

## References

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