

Drug provocation test and basophil activation test in NSAIDs hypersensitivity

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Hypersensitivity to non-steroid anti-inflammatory drugs (NSAIDs) is reported to be the second most common cause of drug allergy. Several subtypes of NSAIDs hypersensitivity have been described depending on symptoms (respiratory, cutaneous, anaphylaxis), timing (immediate, delayed), underlying chronic disease (asthma, chronic urticarial) or the possible mechanism of the reaction (allergic, non-allergic). Recently, the European academy of Allergy and Clinical Immunology (EAACI) “Task Force on NSAID Hypersensitivity” offered algorithms for diagnosis and management. Skin test, oral provocation challenge and *in vitro* testing with the culprit drug are all recommended options in diagnosis.

Oral provocation test remains the gold standard for the diagnosis of drug hypersensitivity. However, such test is life-threatening in patients with anaphylaxis, bronchospasm with respiratory distress to the culprits or multiple NSAIDs allergy. Employing selective cyclooxygenase 2 inhibitors for oral provocation test is another safer option in clinical practice, despite rare drug allergic reactions is still recorded.

Basophil activation test (BAT) is a flow cytometry-based assay where the expression of activation markers measured on the surface of basophils following stimulation with allergens. In recent years, BAT has been validated in the diagnosis of an IgE-mediated allergy from neuromuscular blocking agents, beta-lactam antibiotics and clavulanic acid, iodinated radiocontrast media, gelatin-based plasma expanders. BAT has also been proposed to detect aspirin and NSAIDs hypersensitivity with high sensitivity and specificity, despite not stated in current guidelines.

Here, today, we will share with you several cases of NSAIDs hypersensitivity in which BAT and oral provocation test are applied clinically.