



Allergies: When the Immune System Backfires

Video Transcript

Diagnosis of drug hypersensitivities

[Andreas J. Bircher]: Drug allergies and hypersensitivities are very heterogeneous and so are the underlying mechanisms and reactions. The ABCDEF rule can be applied to diagnose drug hypersensitivities by means of a structured approach.

The first step includes the assessment of the patient's detailed medical history. What medications does the patient currently take? What type of signs and symptoms appeared? Did the same reaction occur at a previous intake of the same drug? Does the patient have any known allergies?

In the next step, all clinical manifestations are observed and documented. What type of skin lesions are observed? Where do they occur? Does the lesion size or appearance change? Does the patient show any systemic symptoms, such as fever or fatigue? The graph shows examples of manifestations. You find it included in the slides for download. Thus you may study it at your own pace.

The chronology of the events is assessed and documented next. A detailed description might help to identify potential mechanisms underlying the observed reaction. The exact time and duration of the drug intake, as well as the onset and duration of the reaction, are of interest here. For example, a hypersensitivity reaction may occur after a therapy length of one to three weeks. The induction or sensitization period for IgE, or IgG antibodies, or T cells is between five to seven days. The elicitation phase depends on the initial specific immune trigger. Immediate type, or type 1, IgE mediated reactions start within minutes to hours. The same time period is typical for pseudoallergic reactions. Type 2 or 3 IgG mediated reactions typically set in after some hours to one day. Until the clinical manifestations become apparent, it may even take a few days. Delayed type, or type 4, T cell mediated reactions start within one to two days. The duration of a hypersensitivity reaction may vary too. Immediate reactions tend to last a few hours to some days. Delayed reactions may last from several days to some weeks.

Then the findings of the medical history, the observation of the clinical manifestations, and the chronology of events are combined to establish a clinical diagnosis.

The aim of the extended diagnosis is to early notice potential danger signs pointing to severe reactions or complications. Severe cutaneous adverse reactions, or short SCARs, are examples of such severe reactions. Showing, for instance, extensive blisters and mucosal involvement. And are there any internal organs involved? This latter diagnosis requires blood tests.

Finally, further specialised investigations are done to definitely confirm sensitization to a suspected drug allergen. This step should be done after the healing of all manifestations but within one year after the incidents. These investigations include skin, blood, and provocation tests. Provocation tests are the only test procedure for pseudoallergic reactions. These should only be done by experienced physicians and under intensive surveillance. Moreover, alternative drugs are often tested along to provide the patient with a safe alternative for the future.

The patient and the treating physicians should be informed about the test results. If possible, an allergy card or passport with the international non proprietary name, short INN, and brand names of the drug

should be given to the patient. The date and the clinical manifestations should be mentioned. This will help to better assess the reaction and potential risks at a future drug treatment.