

NEWS & VIEWS

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Management of children with a suspicion of immediate drug hypersensitivity

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Anaphylaxis and immediate urticaria can occur after drug administration and constitute a major public health problem as it is associated with a potential life-threatening risk. In children, the most commonly incriminated drugs are antibiotics, particularly beta-lactams (BL), nonsteroidal anti-inflammatory drugs (NSAID), and vaccines, probably related to the high rate of prescription of these drugs.¹

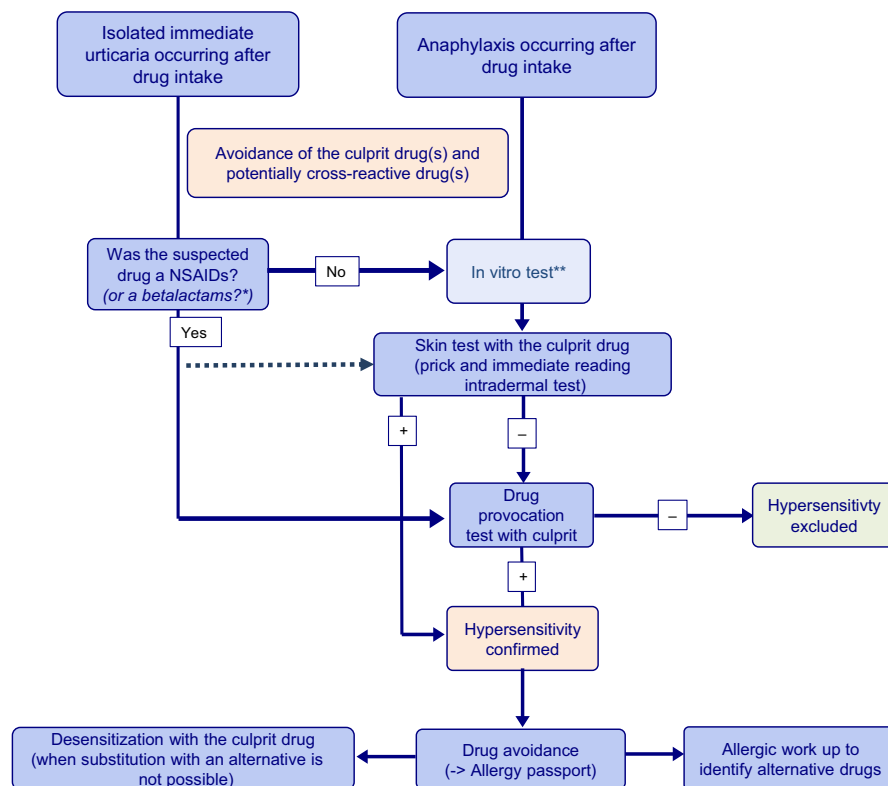
The diagnosis of drug-induced immediate reaction relies first of all on an accurate clinical history. Of note, a detailed description of the episode during the acute phase is essential as the patient might not recall or be aware of the drugs involved and the chronology of the reaction. Immediate reactions typically occur 1–6 hours after drug administration and can manifest as immediate urticaria and/or anaphylaxis.² Urticaria is characterized by the sudden appearance of wheals, associated or not with angioedema, and typically one single lesion disappearing within 24–48 hours. International consensus guidelines have been published for the definition of anaphylaxis, and criteria have been proposed.³ In selected cases, tryptase can be measured during the acute phase to orientate the diagnosis.

When there is a suspicion of drug-induced immediate hypersensitivity, a complete allergic workup, ideally performed 4–6 weeks after the initial reaction, is important in order to confirm or exclude an allergy (Figure 1).²

The currently available diagnostic tests for the diagnosis of immediate hypersensitivity include in vitro tests (specific IgE, basophils activation tests), skin tests (prick test and immediate reading intradermal tests), and the drug provocation test (DPT).² Skin tests are recommended in current guidelines for certain drugs.^{4,5} Nonirritating concentrations have been proposed for most common drugs, but

have been validated mainly for penicillin and NMBA.⁴ However, it is important to note that these tests have not been really validated in the pediatric population and are poorly standardized. In addition, these are logistically demanding and relatively painful.¹ Regarding NSAID reactions, frequently incriminated in children, it is important to note that skin tests are rarely used, as they have not been validated.⁶ An exception includes dipyrone (rarely used in the pediatric population), which has been associated with high rate of anaphylactic reactions.⁶ Some specific aspects have been highlighted in the pediatric population.⁷ For example, the rate of systemic reactions during skin testing with BL is lower than in adults, and a full dose is recommended by many reference centers as a first step.⁸ For BL, some studies have suggested to skip skin tests before the DPT for benign immediate reactions, as it is currently recommended for nonimmediate reactions.⁹ However, these studies included a limited number of patients that cannot reach the power to exclude a potential severe anaphylactic reaction. So further studies are needed to confirm the safety of this approach, and currently, such approach could not be recommended.⁷ Generally, it is important to perform a complete allergic workup, including a DPT, in children with a suspicion of BL allergy to decrease overdiagnosis. Regarding patients with a history of anaphylaxis occurring after drug administration, the DPT is mainly performed in patients with a low suspicion to exclude an allergy. Otherwise, the DPT is largely avoided in this specific situation. Different protocols have been proposed for the DPT and varied with different incriminated drugs, but no specific protocols in the pediatric population have been developed.⁷ Further studies are urgently needed to improve the management of children with a suspicion of drug-induced anaphylaxis, particularly for drugs other than BL and NSAID.

FIGURE 1 Management of children with a suspicion of immediate drug hypersensitivity. *For BL, some authors have suggested to skip skin test in case of benign immediate urticaria. However, based on the current evidence, such approach could not be recommended. **if tests are available



CONFLICT OF INTEREST

The author has no conflict of interest to declare.

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