Surviving an adverse drug reaction

A three-year old girl has been suffering from long-standing eczema that always worsens during the winter months. She is presently treated with oilated baths, unscented moisturizing cream and topical 1% hydrocortisone cream twice a day. Hydroxyzine is added for pruritus when needed. Over the past month, she has been scratching more, not sleeping well and has presented with excoriated red areas oozing yellowish thick discharge. She has no fever. Superinfected eczema was confirmed, and a cephalexin suspension was prescribed, 175 mg four times a day.

After the first dose, she developed a generalized urticarial rash, swelling of her lips and tongue, wheezing and vomiting. The parents promptly called 911. On arrival of the emergency medical team, an adrenaline injection was administered and she received 100% oxygen. In hospital, the patient was admitted to the intensive care unit and treated with methylprednisolone, ranitidine and cetirizine. She progressively improved over the following two days and was discharged home.

LEARNING POINTS

- Adverse drug reactions (ADRs) rank as one of the top 10 leading causes of death and illness in the developed world.

- In 2007, the CPSP ADRs study confirmed 41 cases of suspected paediatric (serious and life-threatening) events. Product groups most commonly associated with suspected ADRs were anti-infective agents, followed by anticonvulsants and antineoplastic agents.

- ADRs can be classified as either immunological (either type 1 immunoglobulin [Ig] E mediated, type 3 serum sickness or type 4 delayed hypersensitivity) or nonimmunological. Nonimmunological reactions can be either 'pharmacological' or 'idiosyncratic'.

  Pharmacological reactions are the most common and are usually dose-related, while idiosyncratic reactions are less common, often serious, not dose-dependent and are not predictable.

- Anaphylaxis, a severe form of type 1 IgE-mediated reaction, involves the interaction of antigen with IgE on basophils and mast cells, which triggers the release of histamine, leukotrienes and other mediators that cause diffuse smooth muscle contraction (bronchoconstriction, vomiting and diarrhea) and vasodilation with plasma leakage.

- Atopy in the presence of asthma that is not well controlled increases the risk of death from anaphylaxis.

- The first-aid treatment of choice for an anaphylactic reaction is an intramuscular injection of adrenaline that should be administered promptly. The correct dose is 0.01 mg/kg of a 1:1000 solution, to a maximum of 0.3 mg (0.3 mL).

- An anaphylactic reaction to an oral antibiotic, while possible, is not common. In such cases, an assessment by an allergist would be of assistance.

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The Canadian Paediatric Surveillance Program (CPSP) is a joint project of the Canadian Paediatric Society and the Public Health Agency of Canada, which undertakes the surveillance of rare diseases and conditions in children and youth. For more information, visit our Web site at <www.cps.ca/cpsp>.

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