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Letter to the Editor

Anaphylaxis – A white elephant in the emergency room

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In the pediatric population, the most common triggers for allergies include food, insect bites, medications, and environmental allergens, whereas in a quarter of the cases, the trigger is unknown.[1] Anaphylaxis is the most fatal form of an allergic reaction.[1] The National Institute of Allergy and Infectious Diseases in 2006 provided a standardized set of clinical criteria for the diagnosis of anaphylaxis which are universally followed till date.[2] Despite these well-established criteria, the incidence of anaphylaxis is highly variable and 1 in 20 patients is still undiagnosed.[1,3-5] This can be attributed to the highly variable and atypical presentations in the pediatric population and difficulty in applying all the standard criteria in infants and small children. This leads to both under- and over-diagnosis of anaphylaxis in the busy pediatric emergency.

We would like to describe a case of an adolescent girl who presented to the emergency department with history suggestive of multiple episodes of anaphylaxis in the previous year. She had several prescriptions with diagnosis of anaphylaxis and had received epinephrine, antihistaminics, steroids, as well as inhalers for the same. Her current symptoms consisted of generalized itching, facial swelling, pain abdomen, and choking sensation with clinical examination unyielding. She was admitted for observation and management in view of the significant history. During the hospital stay, she had multiple such episodes satisfying the anaphylaxis criteria with no significant response to adrenaline. Probing deep into the history, it was found that the initiation of her symptoms coincided with unfortunate events in the first-degree relatives that had affected the child psychologically. Significant improvement was seen after psychological counseling and medications.

Now, the million-dollar questions come – Is making a diagnosis of anaphylaxis sufficient in all suggestive presentations or something more is required post event in selected situations? It is universally known that anaphylaxis is a life-threatening emergency and needs immediate management with epinephrine. But what comes next? During the episode, the patient requires observation in case of a biphasic reaction and an emergency action plan needs to be instituted. Meanwhile, attempts should be made to identify the probable triggers and appropriate allergen avoidance advices should be given. Cases of recurrent anaphylaxis warrant an allergist referral for comprehensive allergy workup. Appropriate serological tests as well as dermatological tests can be undertaken to identify the triggers.

The diagnosis of anaphylaxis is a challenge to physicians worldwide, wherein a significant number of patients are either under- or mis-diagnosed. Although most clinicians would feel that underdiagnosis is a bigger threat due to poor outcomes, misdiagnosis and overdiagnosis are also emerging problems in the current scenario. Hence, the new challenge is to differentiate true anaphylaxis from mimickers. Majority of the cases can be diagnosed with a good history and clinical examination during the episode supplemented with videographic evidence. Laboratory

investigations may act as an adjunct to the diagnosis, though not required routinely. Most specific investigation is the measurement of serum beta-tryptase levels during an acute episode (within 3 h) followed by serial samples during convalescent phase, which can help in correctly identifying the mimickers such as systemic mastocytosis, leukemia, and renal failure. However, it has a limited use in emergency settings as most laboratories do not provide the results immediately and also it is not significantly raised in food triggered anaphylaxis.[6] Most other investigations such as eosinophils, serum IgE levels, histamine, and its byproducts have no definitive use in the diagnosis. Furthermore, serological tests such as Phadiatop/Immunocap and serum specific IgE levels as well as dermatological tests can be done at least 4 weeks after an acute episode for accurate interpretation.

Even though mortality related to anaphylaxis is rare, a high index of suspicion should be kept to improve the diagnostic accuracy of atypical presentations. Proper allergen avoidance advice as well as anaphylaxis action plans are an essential part of treatment. On the other end of the spectrum, all cases of recurrent idiopathic anaphylaxis should be thoroughly worked up keeping in mind about mimics as important differentials to prevent overdiagnosis and needless treatments.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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