

Exercise Induced Anaphylaxis

We read the article on anaphylaxis due to red fire ant bite by Parvat, *et al.* [1] with interest. They have rightly reported that all the anaphylaxis due to red fire ant bite is not rare but no reports are available from India. Similarly Exercise induced anaphylaxis, which is a recently described rare disorder, the first case described in 1979 and about thousand cases reported in last 30 years, has not been reported in Indian literature [2]. The typical age of onset is adolescent to third decade of life. We recently came across a case of exercise induced anaphylaxis at the age of 6 years. In a 10-year retrospective study by Sheffer, *et al.* [3], the average age of onset was 26 years.

A 6-year-old male child was referred to us with complaint of episodes of dyspnea from last 2 months. On investigations including chest X-ray and echocardiography, no cardiac and respiratory cause of dyspnea was found. Patient was admitted for observation. Patient's weight was 15 kg and height 130 cm. Vitals were stable. General physical examination and systemic examination was normal. The child remained well in the ward for 3 days. On 4th day, the child developed severe urticaria all over the body, child was gasping for breath, holding his neck as if having choking sensation. On examination, patient's eyes were congested. Facial flushing, cutaneous erythema and multiple urticarial lesions about 10-15 mm in size were present over whole body. Patient's pulse was 120/min, respiratory rate 40/min severe labored breathing, and blood pressure 60/40mm Hg. The child was irritable. On auscultation, bilateral rhonchi were present. Immediate oxygen inhalation by facemask and I/V fluids were started. Inj. Adrenaline S/C, inj. Hydrocortisone I/V and inj. avil I/V were given. After about one hour, respiratory distress settled and rash disappeared. Patient recovered completely at the end of one hour. Serum levels of IgA tissue transglutaminase was sent. It turned out to be negative. On asking the parents, they told us that the entire episode was provoked by running. On further questioning the mother, she told that from last 2 months, the child had repeated episodes of breathing difficulty associated with facial flushing and urticaria which were precipitated by running or excessive crying. As per mother, previous episodes were mild in severity. Cessation of physical activity results in immediate improvement of symptoms but the child never recovered completely. There was no relation of these episodes with food intake and environmental temperature.

From history and examination, we diagnosed this case as exercise induced anaphylaxis. More than 1000 cases have been documented over past 30 years, with exercise induced anaphylaxis accounting for about 7-9% of all anaphylaxis cases [2]. Cutaneous mast cell degranulation and elevation of plasma histamine and trypticase has been documented in exercise induced anaphylaxis. A large subset of patients will not develop anaphylactic symptoms with exercise unless they have ingested certain food groups a few hours before exertion. Food dependent exercise induced anaphylaxis has a prevalence of around 0.02 % [4]. The food groups most commonly implicated include wheat products (around 60% cases) [5], soymilk, peanuts, shellfish, corn, garlic, rice, celery, cheese, alcohol, tomato, peaches, vegetables.

There are other factors which has a clear influence on the development of anaphylaxis. Exercise induced anaphylaxis may occur in extremes of temperature (for instances, in athletes with cholinergic urticaria who exercise in the heat, or in athletes with cold induced urticaria who exercise in the cold). Treatment of exercise induced anaphylaxis consist of immediate stabilization geared toward the anaphylaxis response with epinephrine and antihistamine. Due to potentially fatal nature of disease, clinician should be aware of its clinical features and appropriate management.

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