

Letter

Cetirizine-responsive, persistent idiopathic eosinophilia in a nonatopic child

Atopy is one of the most common causes of eosinophilia in the developed world.^{1,2} Antihistamines have been successfully used in the treatment of atopy and associated eosinophilia.^{3,4} However, it is unclear whether antihistaminic therapy is effective in controlling eosinophilia in patients without associated atopy.^{1–4} We present a case of a nonatopic child who presented with idiopathic eosinophilia responding to antihistaminic therapy.

A 2-year-old boy of Russian descent from a nonconsanguineous couple initially presented for medical attention while living in Russia with nonpruritic rash on the abdomen at 16 months of age. He was found at that time to have a profoundly elevated white blood cell count of 74,600/ μ L with an eosinophil count of 60,400/ μ L. He was hospitalized and treated with antibiotics because of suspected concurrent infection. Elevated total white blood cell and eosinophil cell counts initially resolved within 1 to 2 weeks but then again began to increase 3 weeks later, along with return of the abdominal rash but without other associated symptoms.

He was then given a trial of 2.5 mg of cetirizine daily while in Russia, resulting in complete clinical resolution of the rash and marked reduction in eosinophil count to less than 100/ μ L, 15 months before presentation for our evaluation. Since that time, he has taken cetirizine several times, and each time cetirizine

treatment was discontinued, the eosinophilia would recur within 14 to 60 days (mean eosinophil count while not taking cetirizine, 20,100/ μ L), without consistent recurrence of rash. When cetirizine treatment was resumed, his eosinophil count would return to less than 200/ μ L (mean eosinophil count with cetirizine treatment, 770/ μ L) (Fig 1).

The patient was otherwise growing well, with normal growth percentiles (weight >97th percentile and height at the 87th percentile), with normal clinical examination findings, no dysmorphism, and no organomegaly. Because of persistence of eosinophilia, extensive evaluation for infectious, atopic, endocrine, and hematologic causes was undertaken. The patient was nonatopic at multiple allergy evaluations, with normal IgE levels. He had no known food allergies and had negative skin test results for common food allergens, including wheat, milk, eggs, soy, and peanut. He was nonetheless prescribed a dairy and egg-free diet without associated improvement in eosinophil count. The patient has no history of other atopic conditions, including asthma, eczema, and allergic rhinitis.

Test results for immune deficiency were also normal, with normal T-, B-, and natural killer lymphocyte subsets and normal immunoglobulin levels. Assessment for clonal population with

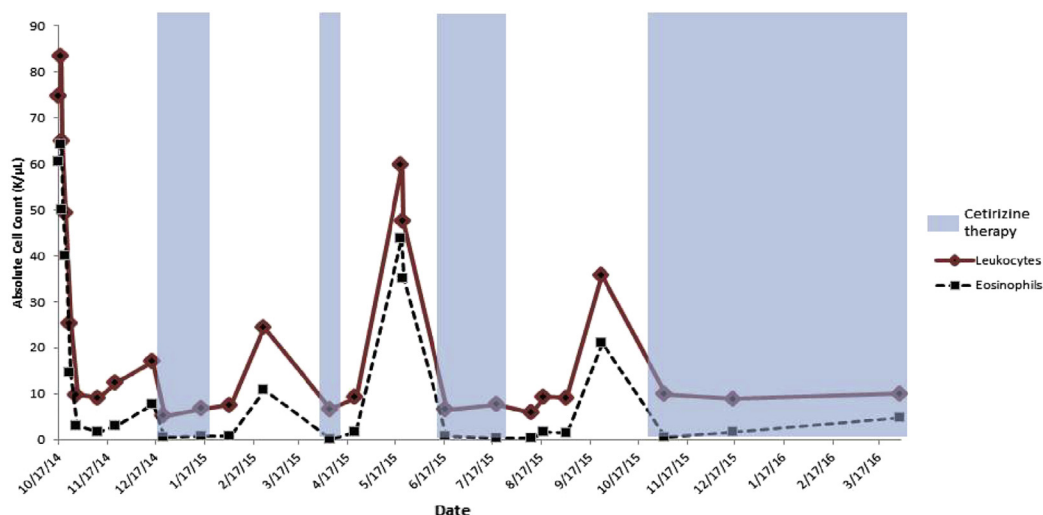


Figure 1. Association of cetirizine therapy with leukocyte and eosinophil counts over time.

Total leukocyte count (red line) and eosinophil count (dotted line) were consistently below 10K/ μ L and 2K/ μ L, respectively, during cetirizine therapy (blue shading) and peaked to between 20–60K/ μ L (leukocytes) and 10–45K/ μ L (eosinophils) within two months of cetirizine discontinuation.

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leukemia and lymphoma phenotyping in peripheral blood was performed, and the results were negative. Infectious disease workup has yielded negative stool evaluation results for ova and parasites and negative viral, fungal, and parasitic serologic test results. Tryptase and random cortisol levels were within normal limits, the results of 2 bone marrow biopsies were essentially normal (except for marked eosinophils), and fluorescence in situ hybridization results were normal for the *CHIC2*, *PDGFRA*, and *FIP1L1* genes. The findings of cardiac evaluation with pediatric echocardiogram were also within normal limits.

Given the favorable adverse effect profile of antihistaminic agents compared with traditional therapy with corticosteroids,^{5,6} this case suggests a trial of antihistamines may been considered in patients with idiopathic eosinophilia even in the absence of associated atopy. This may be particularly useful for controlling eosinophilia during the initial investigation for underlying causes, when use of corticosteroids may mask underlying malignant tumors.⁷

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