

Letter

SUCCESSFUL TREATMENT OF PEDIATRIC HYPEREOSINOPHILIC SYNDROME WITH SUPLATAST TOSILATE

Idiopathic hypereosinophilic syndrome (HES) is characterized by eosinophilia (eosinophil counts $> 1,500/\text{mm}^3$) that persists for longer than 6 months in the absence of known causes.¹ Pediatric HES is a rare disease,² and, like its counterpart in adults, glucocorticoids are the common treatment. However, long-term steroid therapy has various adverse effects, such as inhibition of growth in children. Recent studies have reported that suplatast tosilate, a selective T_H2 cytokine inhibitor, has successfully treated lesions characterized by eosinophilic infiltration in adult eosinophilic pneumonia and eosinophilic gastroenteritis. We report the first case of a boy with HES who had delayed onset of peripheral eosinophilia with eosinophilic gastroenteritis and eosinophilic cystitis that was successfully treated with suplatast tosilate.

The patient was a 7-year-old boy with HES. Figure 1 shows his clinical course. At the age of 3 years, he was hospitalized with diarrhea and abdominal distension. On admission, abdominal computed tomography showed thickening of the walls of the entire upper gastrointestinal tract and thickening of the bladder wall, whereas the peripheral eosinophil count was elevated to $9,300/\mu\text{L}$. His oral intake improved after admission, as did the gastrointestinal symptoms and eosinophil count, so the patient was discharged. However, hypereosinophilia and thickening of the bladder wall subsequently showed repeated exacerbation and remission (Figure 1a). Since his family's consent for steroid therapy could not be obtained, oral therapy with disodium cromoglycate was performed for approximately 3 years. At the age of 6 years, his eosinophil count rose markedly and the bladder wall became thicker and more irregular. Administration of suplatast tosilate dry syrup (6 mg/kg daily) was commenced.

Authors have nothing to disclose.

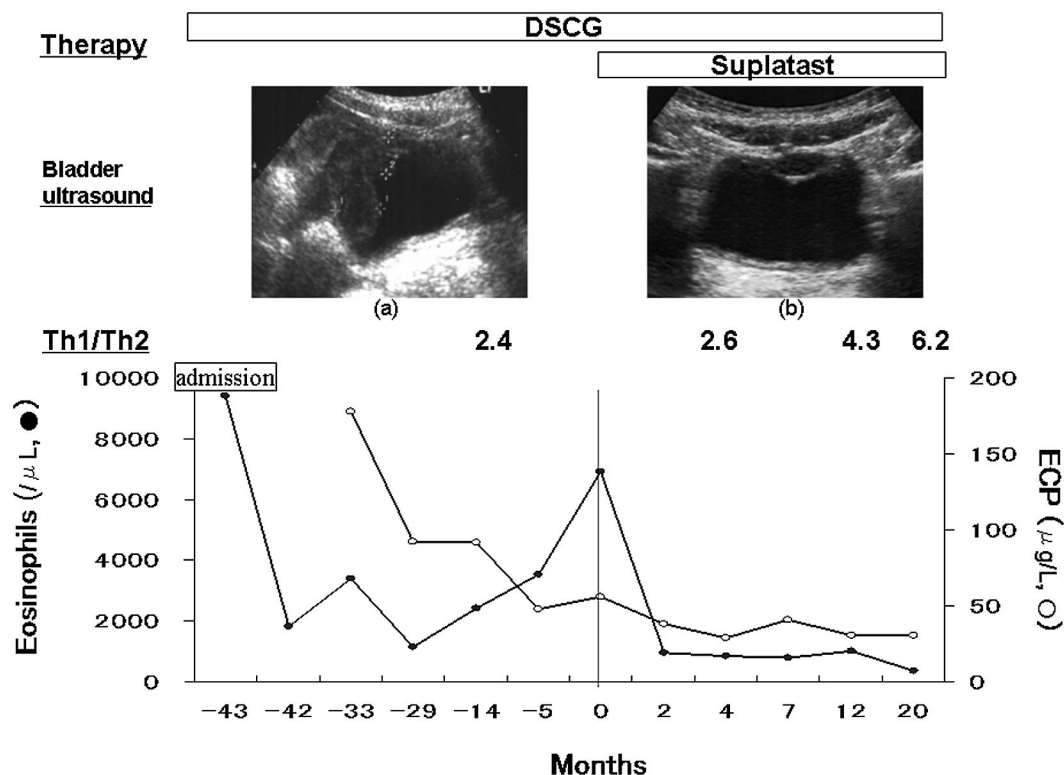


Figure 1. Patient's clinical course. After 2 months of treatment with suplatast tosilate, the eosinophil count (●) decreased below $1,000/\mu\text{L}$ and the serum eosinophil cationic protein level (○) also improved. a, Ultrasonography revealed a diffusely thickened and irregular bladder wall 5 months before treatment with suplatast tosilate. b, Follow-up ultrasonography revealed significant improvement of bladder wall thickening after 6 months of suplatast tosilate treatment.

After 2 months, the eosinophil count was reduced to less than 1,000/ μ L and the serum eosinophil cationic protein level also improved. After 6 months, ultrasonography showed a marked improvement of the bladder wall findings (Figure 1b). At follow-up (20 months after treatment), he was asymptomatic and his eosinophil count remained in the normal range.

To treat this syndrome, the efficacy of mepolizumab and imatinib mesylate was recently reported in adult patients with HES,³ although because of the rarity of this disorder in children, reliable trials have not been conducted to determine the best therapy. HES appears to have responded to suplatast tosilate. Suplatast tosilate selectively suppresses the production of interleukin 4 and interleukin 5 by T_H2 cells, thus inhibiting IgE antibody formation and local eosinophil infiltration. Interestingly, the balance of T_H1/T_H2 cytokine-producing peripheral blood CD4⁺ T cells on flow cytometry⁴ was altered in our patient after the administration of suplatast tosilate (Figure 1). Accordingly, the inhibitory action of this agent on T_H2 cytokine production may have contributed to improvement of the

T_H1/T_H2 balance. We suggest that suplatast tosilate be considered as first-line therapy for pediatric HES.

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