Successful Treatment of Eosinophilic Gastroenteritis with Clarithromycin

Masashi Ohe and Satoshi Hashino

Department of General Medicine, Hokkaido Social Insurance Hospital; Department of Gastroenterology and Hematology, Hokkaido University Graduate School of Medicine, Sapporo, Japan

Eosinophilic gastroenteritis (EGE) is an uncommon disease characterized by eosinophilic infiltration of the gastrointestinal tract, which is usually associated with abdominal pain, diarrhea, ascites, and peripheral eosinophilia. Steroids remain the mainstay of treatment for EGE, but symptoms often recur when the dose is reduced. Macrolides have immunomodulatory effects as well as antibacterial effects. The immunomodulatory effect results in inhibition of T-lymphocyte proliferation and triggering of T-lymphocyte and eosinophil apoptosis. Macrolides also have a steroid-sparing effect through their influence on steroid metabolism. We report a rare case of EGE, which relapsed on steroid reduction but improved following clarithromycin treatment.

Keywords: Macrolides; Clarithromycin; Eosinophilic enteropathy

INTRODUCTION

Macrolides have immunomodulatory effects as well as antibacterial effects. The immunomodulatory effect results in inhibition of T-lymphocyte proliferation and triggering of T-lymphocyte and eosinophil apoptosis [1-3]. Macrolides also have a steroid-sparing effect through their influence on steroid metabolism. A trial of macrolide therapy for bronchial asthma, which is caused by eosinophilic and neutrophilic inflammation, was reported to yield promising results. In the trial, blood and sputum eosinophil counts, and sputum eosinophilic cationic protein levels were significantly decreased after the administration of a macrolide. The results suggest that macrolides have a bronchial anti-inflammatory effect associated with decreased eosinophilic infiltration [4].

Eosinophilic gastroenteritis (EGE) is an uncommon disease characterized by eosinophilic infiltration of the gastrointestinal tract. We report a rare case of EGE, which relapsed on steroid reduction but improved following clarithromycin (CAM) treatment.

CASE REPORT

A 52-year-old man was admitted to the hospital with abdominal pain, abdominal distension, and diarrhea. He had no history of food allergies or bronchial asthma. Clinical examination was unremarkable with the exception of lower abdominal tenderness. A complete blood count revealed a white blood cell count of 13,990/mm³ with an eosinophil count of 8,674/mm³ (62.0%). The
serum immunoglobulin E level was 2,400 U/mL (normal, 6 to 90) and a radioallergosorbent test was positive for numerous allergens, including common foods. The serum level of C-reactive protein was 1.23 mg/L, and those of antinuclear antibody and anti-neutrophil cytoplasmic antibody were normal. Computed tomography (CT) of the abdomen revealed thickening of the small intestinal walls and ascites (Fig. 1). Endoscopic examination showed thickened and erythematous antral, duodenal, and ileal folds (Fig. 2). Biopsies of the ileum and rectum showed eosinophilic infiltration (Fig. 3). Ascitic fluid revealed an abundance of mature eosinophils against a bloody background. No malignant cells or microorganisms were identified. The final diagnosis was EGE.

The clinical course of the disease is shown in Fig. 4. The patient was treated with prednisolone (PSL) at 40 mg/day for 2 weeks which led to a rapid improvement in the symptoms and the eosinophil counts (0/mm³). PSL was then tapered to 20 mg/day and the patient was discharged from hospital. After discharge, the PSL dose continued to be tapered uneventfully until the dose reached 3 mg/day, at which point the abdominal pain recurred and there was a rapid increase in the periph-

---

**Figure 1.** Enhanced computed tomography revealing thickening of small intestinal walls and ascites.

**Figure 2.** Endoscopic examination revealing small white plaques interspersed throughout the thickened and erythematous ileal folds.

**Figure 3.** Histological appearance of mucosal biopsy of ileum demonstrating infiltration with eosinophils (A: H&E, × 200; B: H&E, × 400).