



Clinical Case of the Topical Corticosteroid Therapy of the Severe Degree Cow's Milk Allergy in Infancy

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Abstract

Cow's milk allergy is the most prevalent type of food allergy among infants. Taking into account the fact that elimination diet is the main therapeutic point of the food protein-induced enterocolitis syndrome we have demonstrated the clinical case of urgently measures to using glucocorticosteroids in 3-month-old infant.

Keywords: Food protein-induced enterocolitis syndrome; Cow's milk allergy; Glucocorticosteroids; Infant

Introduction

Food allergy is an excessive reaction of the immune system to protein components. Clinical manifestations of food allergy are atopic dermatitis, gastrointestinal symptoms, allergic rhinitis, asthma, and anaphylaxis. The diagnostic criteria of food allergy are family atopic history, clinical symptoms, positive skin prick tests and food-specific IgE, positive effects of elimination dietary. The main principal of therapy is the avoidance of the offending food [1-4].

Cow's Milk Allergy (CMA) is the most prevalent type of food allergy among infants, affecting up to 3.8% of small children and one of the main causes of food-induced anaphylaxis in the pediatric age [5,6].

The purpose of this publication is demonstration of the clinical case of severe degree of the proctocolitis induced by cow's milk protein from mother's breast milk with estimation of the elimination diet in combination with glucocorticosteroid therapy.

Clinical Case

A 3-month-old girl was admitted to the diagnostic department of the local children's hospital.

Anamnesis of life: The girl was born from a full-term pregnancy and by natural childbirth. The body weight at birth was 3,060 gram and Apgar was score 8/9. Rare regurgitation was noted from birth, but weight gain was sufficient. She was exclusively breastfed. Allergic family history was

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Figure 1: Hematochezia.



Figure 2: Results of colonoscopy. a: Rectum; b: Sigmoid colon; c: Descending colon.

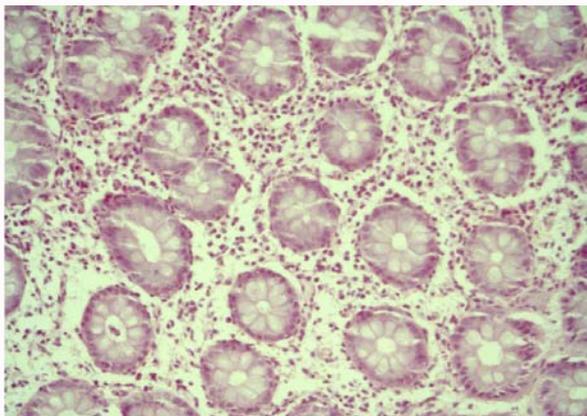


Figure 3: Histological results of the descending colon wall, x40. There is edema, hemorrhages, a significant number of neutrophils, and a moderate number of eosinophils (25-30 eosinophils in one field) in the lamina propria of the intestinal mucosa.

negative.

The disease onset was acute: Vomiting 6 to 8 times a day, loose stool with mucus, abdominal pain syndrome. There was a one-time increase in body temperature up to 37.7°C. From the 5th day of the illness, the blood-tinged stool was detected. The vomiting continued. Oliguria developed and child was hospitalized in the diagnostic department of the local children's hospital.

Upon admission, the patient's condition was very serious. The skin was pallor. There was no edema. Respiratory rate was 34 per minute. Heart rate was 140 per minute. The child did not have wheezing. The cardiovascular system was without pathological abnormalities. The abdomen was enlarged due to distention. Palpation revealed no hepatomegaly and splenomegaly. Stool was 6 times per day. Stool consistency was liquefied, streaked with blood and mucus. Diuresis was decreased to 0.8 ml/kg/h.

Laboratory

Blood count: Hemoglobin (Hb) 110 g/l, red blood cells 3.9×10^{12} cells/L, white blood cells 24.0×10^9 cells/L. Neutrophils 69%, monocytes 10%, lymphocytes 21%, eosinophils 0% and platelets 307×10^9 cells/L.

Blood biochemistry: Total protein 50 g/l, albumin 33 g/l, glucose 5 mmol/l, potassium 2.8 mmol/l, C-reactive protein increased in 10 times. The levels of the creatinine and urea were normal.

Level of the total IgE and serum cow's milk allergen IgE were normal.

A leukocyte in feces was 1 to 3 in the field of view.

Fecal calprotectin level was more than 600 mcg/g (reference values 0 mcg/g to 80.0 mcg/g).

Bacteriological stool cultures were negative for pathogenic flora (*Shigella*, *Salmonella*, *Yersinia*, *Clostridium*, *Campylobacter*). Also polymerase chain reactions were negative (rotavirus, norovirus, and astrovirus).

Clinical and laboratory dynamical observation: Vomiting and blood-tinged stool persisted for 10 days with the subsequent development of hematochezia (Figure 1).

Hb is reduced to 80 g/L. According to urgent indications the fibrogastroscopy and colonoscopy were performed to detect the cause of bleeding.

Fibrogastroscopy revealed hyperemia of the lower third of the esophagus and the gastric.

Colonoscopy result: Severe hyperemia and edema of the mucous membrane of the rectum, sigmoid and descending colon was detected also as linear erosion 1 mm to 2 mm in diameter covered with fibrin (Figure 2). The transverse colon and ascending colon were not visualized due to the risk of perforation. The histological conclusion showed signs of edema, hemorrhages, a significant number of neutrophils, a moderate number of eosinophils (25 to 30 eosinophils in one field of view per 40x HPF) in lamina propria of the intestinal mucosa (Figure 3).

The diagnosis was made on the basis of the above data: Food Protein-Induced Enterocolitis Syndrome (FPIES), severe degree, hematochezia bacterial overgrowth syndrome post-hemorrhagic anemia.

Therapy is prescribed according to the following regimen:

- 1) Strict mother's CMP-free diet (without target result);
- 2) Antibiotic therapy (Amoxicillin + Metronidazole);
- 3) Red blood cells transfusion;
- 4) Electrolyte correction by intravenous solutions infusion;
- 5) due to the severe course of colitis and absence of positive dynamics from the mother's strict CMP-free diet, Dexamethasone (Dexon, Russian Federation) was prescribed intravenously at a dosage of 2 mg 2 times (1 mg per kg of body weight) for 7 days, then the dose was reduced to 1 mg 2 times a day for 3 days.

Due to therapy, a significant improvement with a decrease of bloody stool was noted. On the 10th day of treatment, steroid therapy was continued with the appointment of Budesonide (Budenofalk, Lozan Pharma GmbH/Dr. Falk Pharma GmbH) which was prescribed

in the form of enteric capsules of 1.5 g 2 times a day for 1 month, then 1.5 mg 1 time per day for 1 month. Budenofalk was prescribed after the meeting of the expert commission.

Examination of the child was performed every month during six months. The baby general condition is good. There are no manifestations of colitis symptoms. The child is breastfed still. Mother is keeping a strict CMP-free diet. Complementary foods were introduced into the child diet in accordance with the terms: Cow's free cereals, vegetables and meat.

Conclusion

Taking into account the fact that the elimination diet is the main diagnostic criterion for FPIES, we have demonstrated a clinical case of the need to take urgent measures to control the disease. The using of glucocorticosteroids reduced the main manifestations of allergic inflammation and achieved the development of stable remission.

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