Case Report

Cyclospora cayetanensis in two children living in the east of Turkey


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Cyclospora cayetanensis is the origin of the diarrhea effect in normal patients and patients with immune insufficiency in all age groups. The contamination occurs directly, by faecal or liquid ways. Seven and eight-year-old two boys, came in the same week during July because of abdominal pain. In the direct parasite analysis of the two patients, Cyclospora cayetanensis has been observed by direct observation and by Ehrlich-Ziehl-Neelsen staining. These have been successfully cured with trimethoprim-sulfamethoxazole. This organisms should be considered unexplained abdominal pain and diarrhea especially during the hot season.

Key words: Child, diarrhea, abdominal pain, trimethoprim-sulfamethoxazole.

INTRODUCTION

Cyclospora is coccidian parasites that predominantly infect the epithelial cells lining the digestive tract (1). Cyclospora cayetanensis (C. cayetanensis) is the origin of the diarrhea effect in normal patients and patients with immune insufficiency in all age groups (Long, 1990). The contamination occurs via faecal, oral or liquid way. It is rarely observed all over the world, but is oftenly observed in tropical and subtropical climate countries (Madica et al., 1993). Some cases have been declared in our country (Koç et al., 1998; Buget et al., 2000).

We have presented the cases of these two children patients hospitalised for abdominal pain the same month and the same week in the same center and developing diarrhea rarely caused by C. cayetanensis during their monitoring in order to remember this parasite.

CASE 1

The eight year old male patient has been carried back from his county location because of his abdominal pain that was lasting for one month. Different treatments have been used for this patient but none of these have been successful. Today, the diarrhea has started. His antecedents were normal. In his family history, a brother had exitus due to acute lymphoblastic leucemia. He does not have repeating disease background. For this patient, who does not have an abroad travelling history, in physical examination, the general condition was good and he presented open awareness. The weight of the patient was 22kg (10 to 25 percentile), the height was 118cm (3 to 10 percentile), and his arterial tension was 110/70 mmHg. Except from the postnasal purulent discharge, the system examinations were normal. In the laboratory examinations results, the hemoglobin value was 14g/dL the leucocyte count was 11900/mm3, the thrombocyte count was 382.000/mm3. The liver functional tests and the renal functional tests were normal. Fibrinogen, sedimentation and C-reactif protein were in the limits of the normal values. The Grubel-Widal and Wright agglutination were negative. No abnormality has been observed in complete urine analysis. The Helicobacter pylori antigen observed in stool was negative. In direct parasite analysis, C. Cayetanensis has been identified by direct observation and by Ehrlich-Ziehl-Neelsen staining (Figure 1 and 2). The abdominal ultrasonography was normal. There were any findings in the patient that can indicate a leucemia. A treatment of trimethoprim-sulfamethoxazole of 8 mg/kg/day has been given to the patient.

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15 days after the beginning of the treatment, the feces analysis was made again. The patient presents no symptoms for the moment.

**DISCUSSION**

The organism infects both immunocompromised and immunocompetent individuals and is more common in children <18 mo of age (Flynn, 2007). Our patients was 7 and 8 years old. C. cayetanensis is seen in our patients the same week. Asymptomatic carriers may be with the organism, but carriers are nearly always diarrhea (Flynn, 2007). Cyclosporiasis outbreaks have been linked with contaminated food and water (Flynn, 2007) After fecal excretion, the oocysts must sporulate to become infectious (Flynn, 2007). In our first patient, abdominal pain and diarrhea were seen simultaneously, while the second patient was suffering from abdominal pain and diarrhea developed secondarily. For the diagnosis, a direct observation of the fecal sediment under microscope or under ultraviolet microscope after acid fast staining is sufficient.

Leucocytes and erythrocytes were not observed in feces (Madica, 1990). The oocysts of C. cayetanensis are 8 to 10 µ large and round. The oocysts undergo sporulation in two weeks in external environment and two sporocytes occurs. Each of these sporocytes contains two sporozoites (Garcia and Bruckner, 1997). The organisms can be seen by using modified acid-fast staining but stain less consistently than Cryptosporidium. They can also be detected with phenosafranin stain and by autofluorescence using strong green or intense blue under ultraviolet epifluorescence (Flynn, 2007). New molecular diagnostic testing, including real-time PCR, is currently under investigation (Flynn, 2007). The oocysts of C. cayetanensis released via feces from the host are not infectious, but they form spores and become infectious in few days or weeks in appropriate
environmental conditions. Until now, the only source known for Cyclospora oocystes is human (Madica, 1990). This finding explains the lack of person-to-person transmission (Flynn, 2007). Incubation period of approximately 7 days. Associated symptoms frequently include fatigue; abdominal bloating or gas; abdominal cramps or pain; nausea; muscle, joint, or body aches; fever; chills; headache; and weight loss. Vomiting may occur. Bloody stools are uncommon (Flynn, 2007).

Our two patients presented abdominal pain. Liquid diarrhea without bleeding had started in one of them the day he was hospitalized. The other patient did not present diarrhea. Turgay et al. (2007) have found Cyclospora oocysts in 23 patients during feces examination during the work they led in Izmir on 4660 immunostrong patients complaining from gastrointestinal troubles and on 326 immunosuppressed patients presenting allergic symptoms (Turgay, 2007).

The parasite appears in immuno deficient patients (Arora and Arora, 2009; Kurniawan et al., 2009; Gupta et al., 2008). However, it has also been identified in immunosuppressed patients (Masucci et al., 2008; Naito et al., 2009). The parasite has also been identified during cases presentation in our country (Koç et al., 1990; Büget et al., 2000). Koç et al. (1998) have identified this parasite during their research on the chronic diarrhea etiology of a patient presenting AIDS (Koç et al., 1997).

During the work of Büget et al. (2000) on a 7 year old boy for whom bone marrow transplantation has been planified following the acute myeloblastic leukemia, the diarrhea suddenly developed during the treatment regime preparation to bone marrow transplantation was due to C. cayetanensis and a trimethoprim-sulfamethoxazole treatment was used to successfully cure the patient (Büget et al., 2000). Yazar et al. (2000) have declared the determination of parasites in three diarrhea cases in adults in Kayseri.

The other important point in the two cases treated is the hospitalization in the same week during July. The climate of our region is comparatively cold, however it becomes hot during summer in July to August. If we consider that the parasite is responsible of epidemic in temperate regions, it is conform to literature for these cases to happen during summer.

The treatment of choice for cyclosporiasis, as for isosporiasis, is trimethoprim-sulfamethoxazole (5mg trimethoprim and 25mg sulfamethoxazole/kg/dose bid peroral for 7 days, maximum 160mg trimethoprim and 800 mg sulfamethoxazole/dose). Ciprofloxacin is effective in patients intolerant of sulfonamide drugs (Flynn, 2007). Trimethoprim-sulfamethoxazole has been used for one week for the treatment of our patient. No parasite has been observed in the feces examinations of these two patients in the control realized 10 after the treatment. If the patient suffers from dehydration simultaneously to the treatment, especially in the case of children, oral or intravenous liquid support must be given.

**RESULTS**

This organisms should be considered unexplained abdominal pain and diarrhea especially during the hot season.

**REFERENCES**


