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CRYPTOSPORIDIOSIS: GIEMSA AIDED DIAGNOSIS OF DUODENALTISSUE

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ABSTRACT : Cryptosporidiosis (abbreviated as Crypto) is a parasitic transmitted disease affecting all vertebrates including humans. It causes watery diarrhea and abdominal cramps.Children and immunocompromised patients are severely affected.Method: This is a retrospective study applied on fifty two patients complaining from recurrent watery diarrhea and upper gastrointestinal discomfort, OGD were done and duodenal biopsies were collected from the patients. The duodenal tissues were paraffin embedded and stained with both (hematoxylin-eosin) and giemsa stain. Stool samples were already done.Results: Giemsa stain was helpful in highlighting the crypto.parasite but statistically was not significantly different from the HandE stained duodenal tissue nor stool method of diagnosis.Conclusion: Giemsa stain can be a useful diagnostic method to discover this microorganism in duodenum in stool negative cases.

Key words : Cryptosporidiosis, Giemsa, duodenal tissue.

INTRODUCTION

Cryptosporidiosis is parasitic induced disease, affecting the gastro intestinal system (the small intestine), was firstly reported in1976(Shirley, Moonah, and Kotloff, 2012). It was the major cause of several outbreaks due to waterpool inthe UnitedStates (Widerstrom *et al*, 2014; Joce *et al*, 1991). Cryptospordia is a protozoal microorganism that is related to the Apicomplexangroup (same group of malaria). In 1976. It was firstly detected as a possible a pathogen of some gastrointestinal manifestations (Navin *et al*, 1984). The cryptosporidiosis was defined as one of the most important enteropathogens all over the world (Putignani *et al*, 2010). The disease is of global distribution both in the developed and developing countries.The incidence may vary according to the seasonal changes (increased in summer), may be due to the plenty usage of swimming pools and the contamination of water sources (Shields *et al,* 2010). This pathogen can be transmitted via the ingestion of contaminated water and food but zoonotic and anthroponotic mechanisms was also presumed (Sponseller *et al*, 2014). The incidence of induced diarrhea in immunocompetent persons was 2.1% in developed and 6.1% in developing countries. The rate increases up to 24% in AIDS persons with diarrhea (Current *et al*, 1991).

The life cycle of the parasites starts when the human ingests the contaminated water or food with oocyst. After reaching to the small intestines, sporozoites are liberated and infect the surface enterocytes.Inside the epithelial cells of the gastrointestinal system, the parasites will pass into the stage of asexual development (merogony) and then sexual maturation (gametogony), yielding into microgametes and macrogametes. Fertilization of macrogametby the microgametes will produce two different types of oocysts. The thin walled oocyst causes reinfection while the thick walled type will be excreted with the stool of the patient (DuPont *et al,* 1995; Laurent *et al*, 1999).

According to the size host specifity and molecular studying,Sixteen species of cryptosporidium parasite were identified,the well known type that affects the human is *C*. parvum but other types can infect human including *C.hominis*,*C.meleagridis, C. felis, C. canis, C. muris and C. suis* (Cama *et al,* 2008; Iqbal *et al*, 2011).

The clinical signs of crytposporidial infection are variable. Wateryand/or mucoid diarrhea, abdominal cramps,fever, feeling fatigue and vomiting. These symptoms may persist for days or sometimesweeks (Hunter *et al*, 2002; Garcia *et al*, 1984).

In developing countries,the infection mostly affects children and it's a main cause of diarrhea in children while in developed countries the immunocompotent adult may be involved more due the usage of swimming pools especially *C.Pavum* (Mason *et al*, 2009; Goldstein *et al*,