

(2002/10/1 2002/1/3)

5

302

)

(Kinyoun)

.*Cryptosporidium*

(

5

%20.52

%40.90

%64.52

5

.%35.48

%15.23

%19.20

%20.52

%9.27

%13.91

Kinyoun

%93.61

%100

%74.22

%67.78

%45.18

Kinyoun

. 4.3

%100

.%14.50

%67.74

%12.90

%19.40

.

The Role of Laboratory Techniques Diagnosis of Cryptosporidiosis in Children in Ninevah Governnorate

Layan Y. Khalil

Muhson S. Daoud

*Department of Microbiology
Veterinary Medicine College
Mosul University*

ABSTRACT

The present study covered a diagnostic study by which the *Cryptosporidium* oocysts were identified in 302 samples, taken from children, using five laboratory techniques (Iodine staining, sugar flotation, modified acid fast (hot) stain, modified acid fast (cold) stain (Kinyoun) and formalin sedimentation technique), the total infection reached 20.52% in children aged from 6 days till 5 years, maximum rate of infection was 40.90% in children more than 2 to 3 months, while it wasn't found in more than 2-5 years.

The study showed an infection rate among females 64.52% and 35.48% in males.

The study recorded a higher rate of infection using iodine staining technique 20.52% followed by sugar flotation 19.20% then modified acid fast (hot) stain 15.23% formalin sedimentation 13.91% and finally modified Kinyoun cold modified stain 9.27% in children. As such the best technique for diagnosis was iodine staining with a 100% efficiency and 39.61% for sugar flotation technique, 67.79% for formalin sedimentation, while the efficacy of modified acid fast (hot) stain was 74.22% and 45.18% for modified acid fast (Kinyoun) cold stain.

The average diameter measurement of *Cryptosporidium* oocysts was 4.3 micron. More clinical sign appeared was diarrhea 100% and abdominal pain 14.50% is the less.

Among children with artificial feeding the infection rate was 67.47% and 19.40%, 12.90% in breast and mixed feeding respectively.

(Current and Garcia, 1991)

Eucoccidiida

Sporozoa

Apicomplexa

.(Soave and Armstrong, 1986; Robersts and Janovy, 1996)

(Steiner et al., 1997; Shaltout, 2000)

(Current, 1985)

%11

.(Richard et al., 1996)

...

174) 5 6 302 (128

.2000

(Baron et al., 1994) (Kingoun) -1

%10 Fisons MSE () *

. 10 / 500

*

KOH %10 10

. %10

10 / ° 70 *

. Philip harris

5-3 *

.()

*

.

.

.

*

.

*

*

.X100 X40 Leitz/Wetzilar Orthplan

(Baron et al., 1994) -2

Kinyoun

5

30

 H_2SO_4

%5

.

(Ma and Soave, 1983) - 3

.X100 X40

(Anderson and Bulgin, 1981) -4

. 4 3 20-15 5 *
. 10 / 500

Levitation *

3 6.7 + 3 355 + 454] 3 / 1.27

.[*

7

.X100 X40

(Garcia et al., 1983) -5

3 10 %2.5 %10
10 / 500

.X100 X40

:

50 (1971) (Ocular micrometer)

Cryptosporidium

.

%40.90

5

.(1) %0

...

: 1

%			
20	4	20	2 – 6
40.90	18	44	3 – 2 <
17.50	14	80	5 – 3 <
13.79	8	58	7 – 5 <
18.8	8	44	10 – 7 <
25	4	16	1 – 10 <
20	6	30	2 – 1 <
0	0	6	3 – 2 <
0	0	4	5 – 4 <

(%12.64 %31.25)

.(2)

: 2

%			
12.64	22	174	
31.25	40	128	

%100

.(3)

%14.52

: 3

%		
100	62	
35.48	22	
35.48	22	
29.03	18	
14.50	9	

%20.52

%100

%9.27

.(5 4)

%45.18

: 4

%		
20.52	62	
19.20	58	
13.91	42	
15.23	46	
9.27	28	

: 5

%	
100	
93.61	
67.79	
74.22	
45.18	

%67.74

(6)

%12.90

%19.40

4.3

: 6

%		
67.74	42	
19.40	12	
12.90	8	

%20.52

%18.3

(Kelly et al., 1997)

(Mahdi et al., 1996)

(Nouri et al., 1991)

%21

.

%6.4 %7.66

(Chekly et al., 1997)

(1998)

(Hojlyng et al., 1984)

.

(Nouri et al., 1991)

.

(Gould et al., 1996)

%100

(1998)

%100

Kinyoun

.(Amato-Neto et al., 1996)

IgA IgG

.(Abdel-Moneim et al., 1989; Aidara et al., 1993)

.

. .1971
 . Cryptosporidiosis .1998
 /

- Abdel – Moniem, M.A., El-Domiaty, B.A., Amine, S.M. and El-Saragy, M.A., 1989. Cryptosporidiosis in Infants with Severe Protein Energy Malnutrition. Alex. J. Pediat., Vol. 3, pp.275-279.
- Aidara, A.B., Rogier, C., Gentile, B. and Wane, H., 1993. Etiologies of Acute Diarrhea in Senegalese Rural Children. Dak. Med., Vol. 38, pp.187-191.
- Amato-Neto, V., Braz, LM., Di-Pietro, Ao. and Modolo, J.R., 1996. Oocysts of *Cryptosporidium* spp. In Faces: Comparison of the Modified Kinyoun and Heine Methods. Rev. Soc. Med. Trop., Vol. 29, pp.575-578.
- Anderson, B.C. and Bulgin, M.S., 1981. Enteritis Caused by *Cryptosporidium* in Calves. Veterinary Medicine / Small Animal Clinician University of Idaho WOL Regional Program in Veterinary Medicine, Caldwell Veterinary Teaching Center. pp.865-868.
- Baron, E.Jo., Peterson, L. and Finegold, S.M., 1994. Diagnostic Microbiology. 9th ed, Mosby – Year Book. Inc. St. Louis. 792 p.
- Chekly, W., Gilman, Rh., Epstein, LD., Suarez, M., Diaz, JF., Cabrera, L., Black, RE., and Sterling, C.R., 1997. Asymptomatic and Symptomatic Cryptosporidiosis: their Acute Effect on Weight in Peruvian Children. Am. J. Epidemiol., Vol. 145, pp.156-163.
- Current, W.L., 1985. Cryptosporidiosis. JAMA., Vol. 187, pp.1334-1338.
- Current, W.L. and Garcia, L.S., 1991. Cryptosporidiosis. Clin. Microbiol. Rev., Vol. 4, pp.325-358.
- Garcia, L.S., Bruckner, D.A., Brewer, T.C. and Shimizu, 1983. Techniques for the Recovery and Identification of *Cryptosporidium* Oocysts from Stool Specimens. J. Clin. Microbiol., Vol. 18, pp.185-190.
- Gould, I.M., Shepherd, D. and Currow, J., 1996. Cryptosporidiosis in Grampian 1988-1993. Scien. Week Rep., Vol. 30, pp.260-262.
- Hojlyng, N., Molbak, K., Jepsen, S. and Hansson, A.P., 1984. Cryptosporidiosis in Liberian Children. Lan., Vol. 1, 734 p.
- Kelly, P., Davies, S.E., Mandandra, B., Veitch, A., McPhil, G., Zulu, I., Drobniewski, F., Fuchs, D., Summerbell, C., Luo, N.P., Pabee, Jo. and Farhing, M.J., 1997. Cryptosporidiosis and Also Cystosis in Renal Transplant Recipients. Gut., Vol. 41, pp.811-816.
- Ma, P. and Soave, R., 1983. Three-Step Stool Examination for Cryptosporidiosis in 10 Homosexual Men with Protracted Watery Diarrhoea. J. Infect. Dis. Vol. 147, pp.824-828.

- Mahdi, N.K., Al-Saddon, I.A. and Mohamed, A.T., 1996. First Report of Cryptosporidiosis among Irai Children. East Medit. Heal. J., Vol. 2, pp.115-120.
- Nouri, M., Moghadam, A. and Haghighatnia, H., 1991. *Cryptosporidium* Infection in Human Diarrhea Patients in West Azerbaijan, Iran. Med. J. Islam. Repub. Ir., Vol. 5, pp.35-38.
- Richard, E., Robert, M. and Ann, M., 1996. Nelson Textbook of Pediatrics. 15th ed, W.B. Saunders Com. Philadephia, pp.968-970.
- Robersts, L. and Hanovy, Jr., 1996. Foundations of Parasitology. 5 th ed. WCB Brown Publishers .
- Shaltout, F.A., 2000. Protozoal Food Borne Pathogens in Some Meat Products. Assiut. Vet. Med. J. Vol. 42, pp.54-59.
- Soave, R. and Armstrong, D., 1986. *Cryptosporidium* and Cryptosporidiosis. J. Inf. Dis., Vol. 8, pp.1012-1023.
- Steiner, T.S., Thielman, N.M. and Guerrant, R.L., 1997. Protozoal Agents: What are the Dangers for the Public Eater Supply? Annu. Rev. Med., Vol. 48, pp.329-340.