Study the Prevalence of Cryptosporidium Parvum Infection among Immune Competent and Immune Compromised Patients with Diarrhoea: A Descriptive Study

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Background

Cryptosporidium parvum is a protozoan causing cryptosporidiosis. Primary symptoms are acute, watery, and non-bloody diarrhoea. The study analyzes the prevalence of cryptosporidium infestation in the immune-compromised patient and compares the same among immune-competent subjects within the same age group having complaints of diarrhoea. The study also helps in forming a scoring system relating the numbers of oocysts of cryptosporidium observed per oil immersion field with the CD4 counts of the immune compromised patients to quantify the severity of the decreased immunity.

Aims & Objectives

To study the prevalence of *Cryptosporidium parvum i*nfection among immune competent and immune compromised patients with diarrhoea.

Material & Methods

This is a descriptive study with a sample size of 150. Stool samples of patients are used. From the sample, a thin smear is made. For the study of oocysts modified Ziehl-Neelsen staining (Kinyoun modification) is done. Significant and positive result is considered as count of oocysts more than 30 /oif. Becton- Dickinson FACS counter is used for CD4 count following the manufacturers guidelines. Quantitative variables are described using mean and standard deviation and qualitative variables using %. 95% confidence interval is calculated for prevalence values, the difference is tested using 'z' test and association with age is tested using 'Chi-Square test'.

Results

Prevalence of cryptosporidiosis among the studied sample is 28.66% while that among immune competent patients is 27.38 % and immune compromised is 30.30% having a case distribution with a mean age of 39.32 years.

Prevalence of cryptosporidiosis in HIV+ patients is 28.75%.

Prevalence of cryptosporidiosis in non- HIV+ patients is 32.26%.

Age group distribution

Sr. No.	Age group	immune competent	immune-suppressed
1	< 25	4	1
2.	25-35	7	6
3	35-45	8	5
4.	45-55	2	4
5.	55-65	2	1
6.	>65	0	3

Scoring

Range of CD4	Mean oocysts count	Score	Remarks
60-180	341-599	+ + +	Very low immune status
180-300	300-310	+ +	Low immune status
300-420	277-293	+	Moderate-ly high immune status

Conclusions

The project brings out that cryptosporidium infection is common not only among immun suppressed but also has a high prevalence among immune competent individuals. Any age group in the adult population can be affected. The scoring system can help health care workers in periphery to diagnose immune status of a patient.Type 2 DM and hepatitis also presents a high risk of cryptosporidiosis. Cancer patients have a very high proportion of positive cases. Thus. just not AIDS but other immune suppressing conditions also have a high prevalence of cryptosporidiosis.