ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
Index Copernicus Value: 68 . 16
PubMed - National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 4, Issue – 5, October - 2019, Page No. : 12 - 14

Correlation between Clinical Features and Degree of Immunosuppression in HIV Infected Children

Dr. Monika Singh[1], Dr. Nayan Kumar[2], Dr. B S Karnawat[3]

Department of Pediatrics J. L .N. Medical College & Hospitals, Ajmer (Rajasthan)

Corresponding Author: Dr. Nayan Kumar, Department of Pediatrics J. L .N. Medical College & Hospitals, Ajmer (Rajasthan)

Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Background: HIV(Human immunodeficiency virus) and AIDS(Acquired immunodeficiency syndrome) have made a huge global impact permeating the social, cultural and economic fabric of almost all nations.

Methods: All children registered at ART centre, those attending the centre for follow up and those admitted or attending OPD in pediatric department for the treatment of associated medical illness in one year period were enrolled for study. In our study HIV positive children were divided in two groups PRE ART (ART is not yet started) and ART on the basis of their anti retroviral therapy status. ART was started in 18 months to 5 years old in patients with their CD4 count <500cells/mm^3 and in more than 5years <200cells/mm^3.All data pertaining to clinical and epidemiological characteristics were recorded. They were further classified into clinical staging as per WHO guideline and immunological staging based on CD4 count.

Results: As the clinical stage of HIV positive children increased CD4 count in ART group decreased which was statistically significant(p value 0.001).

Conclusion: To conclude the present study revealed that majority of children with HIV infection presented with varied and vague clinical manifestations mimicking common pediatric ailments. Hence,early identification of the disease,by keeping high index of suspicion and confirming the diagnosis of HIV with the help of appropriate laboratory investigations like ELISA,CD4 count would help in proper management and improving the quality of life for HIV infected children.

Keywords: CD4 count, Children, HIV, WHO clinical stage

Introduction

HIV(Human immunodeficiency virus) and AIDS(Acquired immunodeficiency syndrome) have made a huge global impact permeating the social, cultural and economic fabric of almost all nations. In India too, ever since the diagnosis of the first case of the HIV infection in 1986, this problem has been growing at an exponential rate. Globally an estimated 2.5 million children are living with HIV/AIDS, 10,000 becoming infected daily and 2,60,000 deaths of children under 15 occur due to AIDS related illnesses[1].

HIV infection is increasingly becoming a prominent cause of childhood morbidity and mortality in India. Presently, 2,02,000 children are living with HIV/ AIDS in India. 50% of these die within 2 years, constituting about 18% of 3.1 million AIDS deaths every year[2-4.] Despite the magnitude of the problem, there is paucity of published data on various issues in pediatric HIV

infection from Eastern India. We report correlation of CD4% with the clinical spectrum of HIV infected children from Rajasthan, India.

Material and Methods

Source of Data: The study was conducted on HIV infected children admitted in pediatric department and registered in Anti Retroviral Therapy(ART) Centre of JLN Medical College and Hospital, Ajmer.

Design of Study: This prospective study was conducted in above mentioned patients from June 2017 to May 2018.

Inclusion Criteria

1. Children between the age group of 18 months – 18 yrs with HIV positivity

2. Parents or guardians who gave consent for the study.

Exclusion Criteria

1.Children aged below 18 months because facility for PCR testing is not available presently in our institute.

2.Parents or guardians who did not gave consent.

Method of Collection of Data

(1) **Diagnosed cases:** All children registered at ART centre after confirmation of HIV diagnosis were enrolled in the present study, those attending the centre for follow up and those admitted or attending OPD in pediatric department for the treatment of associated medical illness.

(2) Suspected Cases: For the purpose of the study, The criteria for high risk of HIV infection were

1. Children of HIV seropositive mothers
2. Children with failure to thrive, defined as a child growing below the fifth percentile or a child whose decreased growth rate has crossed two major growth percentiles in a short time.
3. Children presenting with chronic diarrhea, defined as the passage of three or more watery stools or a change in the consistency of stools for a minimum duration of 14 days
4. Children with disseminated tuberculosis ascertained by two or more organ involvement in a child with tuberculosis.

Results

Table no.1:MeanCD4 Count of the HIV positive cases-

CD4 Count	PRE ART(n=152)	ART(n=90)
Mean	649.11	314.87
SD	352.10	118.92
p-value	0.001	0.001

In PRE ART group mean CD4 count was 649.11 while in ART group it was 314.87.The difference was statistically significant.

Table no.2: Distribution of cases according to revised WHO clinical staging-

Clinical stage	PRE ART(n=152)	ART(n=90)
I	48(31.58%)	0(0.00%)
II	99(65.13%)	23(25.56%)
III	5(3.28%)	46(51.51%)
IV	0(0.00%)	21(23.23%)

X2 =142.11, DF=03, p =0.001

In PRE ART group majority(65.13%)were in stage II and 31.58% were in stage I while in ART group more than half(51.51%) were in stage III followed by 25.56% in stage II and 23.23% in stage IV.

Table no.3: Correlation of CD4 count with clinical staging-

Clinical stage	Total no of cases	Mean ±SD CD 4 count		p-value
		PRE ART(n=152)	ART(n=90)	
I	48	600.00±371.90	0.00±0.00	NA
II	122	672.80±340.82	389.16±111.70	0.001
III	51	648.80±382.80	362.58±102.36	0.001
IV	21	0.00±0.00	282.23±79.16	NA

As the clinical stage of HIV positive children increased CD4 count in ART group decreased which was statistically significant(p value 0.001).

Discussion

The clinical spectrum among HIV infected infants and children vary in different areas of the world. Hence, we undertook a study of pediatric HIV infection with their CD4 count and respective clinical spectrum in western Rajasthan, India.

As the clinical stage of HIV positive children increased CD4 count in ART group decreased which was statistically significant(p value 0.001).Similar results were also found by Agarwal et al[5]and Chiappini E et al[6].As the CD4 count decreases risk of infections increases resulting in higher clinical stages.

Conclusion

To conclude the present study revealed that majority of children with HIV infection presented with varied and vague clinical manifestations mimicking common pediatric ailments. Hence,early identification of the disease,by keeping high index of suspicion and confirming the diagnosis of HIV with the help of appropriate laboratory investigations like ELISA,CD4 count would help in proper management and improving the quality of life for HIV infected children.

References

1. Joint United Nations program on HIV/ AIDS(UNAIDS)/WHO. AIDS epidemic update. 2006. Available from: URL:http://www.unaids.org/en/ Publications/default.asp. Accessed October 1, 2007.
2. Joint United Nations Program on HIV/AIDS (UNAIDS) /WHO. AIDS epidemic update. 2004. Available from: URL:http://www.unaids.org/en/ Publications/default.asp. Accessed October 1, 2007.
3. WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV related disease in adult and children. WHO. 2006. Available from: URL: http://www.who.int/hiv/pub/guidelines/HIV staging150307.pdf. Accessed September 18, 2007.
4. Gupta P, Shah D. Protein Energy Malnutrition. In: Ghai OP, Gupta P, Paul VK, editors. Ghai Essential Pediatrics. 6th ed. New Delhi: CBS Publishers & Distributors; 2004. p. 101-118.
5. Bavedkar BS and Agarwal R. Clinical Directed Selective Screening to diagnose HIV infection on hospitalized children in Mumbai, India. J Trop Pediatr. 2005;42:1191-7.
6. Chiappini E, Galli L, Tovo PA, Gabiano C Lisi C, Gattinara GC. Changing patterns of clinical events in perinatally HIV -infected children during the era of HAART AIDS 2007; 21(12) : 1607-1615.