

Clinical Profile of HIV Infected Children 18 months - 15 years of Age

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Abstract

Context: Clinical presentation of HIV infected children is different than adults. Disease progression is rapid. About 30% HIV infected children under one year of age die undiagnosed. Clinical scenario is changing with time and with available treatment. *Aims:* To study the profile of clinical presentation in HIV infected children. *Settings and Design:* Study was conducted in a government medical college of north India. It was hospital based observational study. *Methods and Material:* 140 HIV infected children between the age of 18 months to 15 years diagnosed as per guide lines of NACO were included in study. Clinical and immunological staging was done according to WHO staging criteria. Written consent was taken and counselling was done. *Statistical Analysis Used:* To describe nominal data simple percentages were used. Mean and Standard Deviations were used to describe normally distributed data. *Results:* Common age of presentation was between five to ten years. Perinatal transmission was the commonest mode of transmission (97.8%). Fever (60.7%), Recurrent loose stools (45.7%), Chronic cough (27.8%), Itching and rashes over body (25%) were the common complaints. Anaemia (85%), Lymphadenopathy(59.2%), Skin lesions(47%), Chronic Suppurative Otitis Media(12%) were the common clinical findings. Central Nervous System involvement was seen in six and Cardio Vascular System involvement in four children was noted. One child presented with joint involvement and one had Non Hodgekin's Lymphoma. *Conclusions:* Vertical transmission was the commonest route of infection in children. Prolong fever, recurrent diarrhoea, frequent respiratory infections associated with under nutrition, anaemia and skin lesions were common clinical presentations. One third children were orphan and they were worst sufferer.

Keywords: Clinical Profile; HIV Infection; Children.

Introduction

Children are infected mostly through vertical transmission. 50-70% vertical transmission occur intrapartum [1] across the mucous membrane in the oropharynx or in stomach [2]. Clinical presentation of HIV infected children are different than in adults and varies widely [3,4]. Most of them may be asymptomatic at birth and in early years of life, physical examination may be normal. Initial signs and symptoms may be subtle and non specific. On the basis of disease progression, children are divided in to three groups; *Rapid progressors-* They undergo

rapid downhill course, disease progression is very fast. Most of them (33%) succumbed to opportunistic infections before they are diagnosed, i.e. under 1 year of age [5-7]. *Less rapid progressors-* They become symptomatic usually after infancy, presents with failure to thrive and recurrent infections. *Slow progressors-* They remain asymptomatic for longer period. Their disease progression and pattern behaves like adults. Some children become long term survivor without therapy [8,9]. Some perinatally infected girls have been reported to survive to reproductive age and have given birth to un infected infants [10]. Early diagnosis may be utilised as a window of opportunity for disease modification. Initiation of early therapy

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during acute phase limits establishment of latent reservoir. HAART in acute phase of HIV-I leads to development of strong HIV-I specific CD4T cell proliferation in response to HIV antigen [11]. It helps in lowering of viral set point. Availability of Anti retroviral treatment has changed the picture of clinical presentation.

Most of the work on this subject is focused on adults. Data regarding paediatric HIV status, changed clinical scenario, response to infection, progression of disease and pattern of opportunistic infections are in scanty. To understand these aspects of disease in children, particularly in this region of country, we decided to undertake this study.

Present study is a hospital based observational study, done at S. N. Children Hospital Allahabad and O.P.D. of ART Centre, S.R.N. Hospital Allahabad to study the presenting complaints and physical findings before diagnosis. Both the hospitals are associated hospital of M.L.N. Medical College Allahabad. Study period was April, 2005 to October, 2012.

Methods

140 children of both sexes between age 18 months to 15 years with HIV positive status confirmed as per NACO guidelines of HIV testing, at ICTC MLN Medical College Allahabad, attending the ART Centre SRN Hospital Allahabad and OPD of SN Children Hospital Allahabad during the above mentioned period were included in this study. Using the pre designed proforma these children were enrolled in the study. Care takers were counselled by qualified counsellors and informed consent was taken from guardians for any investigation and treatment. Detailed history and full clinical examination was done in all cases. History of presenting complaints with their duration, severity and recurrence, what were the initial presenting

symptoms, age at which complaints started and how they progressed were enquired in detail. History of blood transfusion, operative procedures, confidential interview regarding sexual behaviour, parents and sibling's HIV status and their survival was enquired. Socio-economic status was decided on the basis of modified Prasad's criteria. Children were classified in different grades of malnutrition according to IAP classification. Weight was recorded on electronic weighing machine. Clinical and immunological staging was done according to WHO staging criteria. Every child was investigated for Complete Blood Count and CD4 count. CD4 count was done with Partec CyFlow® counter flow cytometer. CD4% was used in children below 5 years of age.

Analysis of data

To describe nominal data, simple percentages were used. Mean and standard deviations were used to describe normally distributed data.

Observation

Out of 140 children, 91 were male and 49 were female. Maximum number of children (61, 43.38%) were in age group 5-10 years. Mean age of children was 7.67 years (SD \pm 3.50). 75.71% children belonged to rural area and 24.29% from urban area. 85% children were from Hindu religion and 15% were Muslim. 37.15% children were in Socioeconomic status IV, followed by 35%, 17.14%, 7.14% and 3.57% in Socio Economic Status III, II, V and I respectively. 33.57% children were orphan as shown in Figure 1. 47.14% children were in grade II, 27.86% in grade-I, 20.71% in grade-III and 4.29% were in grade-IV malnutrition. No child was found nutritionally normal. In our study (137) 97.86% children were infected perinatally and (2)1.43% through blood transfusion. In one case mode of transmission could not be traced as shown in Figure 2. Fever, loose stools

Table 1: Distribution of cases according to presenting complaints

Presenting complaints	Number	Percentage
Fever	85	60.71
Loose stools	64	45.71
Cough	39	27.85
Itching over body	35	25.00
Difficulty in breathing	22	15.71
Abdominal distention	21	15.00
Not gaining weight	18	12.87
Ear discharge	17	12.14
Loss of weight	15	10.71
Joint pain	01	00.71
Oral ulcer	22	15.71

Table 2: Distribution of children according to Clinical signs at the time of presentation

Presenting signs	Number	Percentage
Pallor	119	85.00
Lymphadenopathy	83	59.28
Skin lesions	66	47.14
Respiratory distress	37	26.42
Hepato-splenomegaly	29	20.71
Isolated hepatomegaly	25	17.80
Isolated splenomegaly	10	07.10
Parotid swelling	11	07.85
Vitamin A deficiency	21	15.00
Oropharyngeal candidiasis	10	07.14
Clubbing	09	06.42
Icterus	05	03.57
CNS signs	06	04.28
CVS signs	04	02.85
Cyanosis	03	02.14
Joint involvement	01	00.71

Table 3: Type of skin lesions of children in the present study. (n-66)

Type of skin lesions	Number	Percentage
Scabies	13	09.28
Papular Purpuric Eruptions	13	09.28
Pyoderma	12	08.57
Seborrhoeic dermatitis	07	05.00
Fungal skin infection	05	03.57
Fungal nail infection	03	02.12
Chicken pox	04	02.85
Herpes zoster	02	01.42
Cheloid	02	01.42
Non-healing ulcer	02	01.42
Molluscum contagiosum	03	02.14

Table 4: WHO Clinical staging according age. (n-140)

WHO clinical stage	(Age group (in years)		Total
	1.5 - 05	05 - 15	
Clinical stage I	04	13	17
II	22	50	72
III	14	29	43
IV	01	07	08

Table 5: WHO Immunological staging according to age. (n-140)

WHO immunological stage	Age group in years		Total
	1.5 - 05	05 - 15	
Stage I	07	43	50
Stage II	11	16	27
Stage III	14	24	38
Stage IV	09	16	25

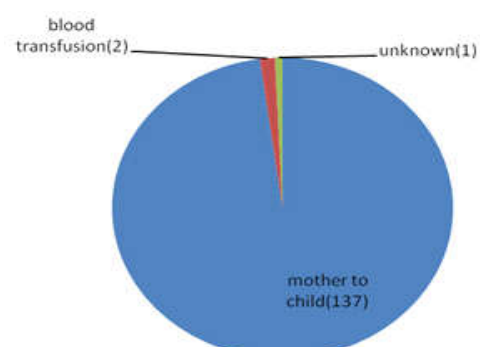
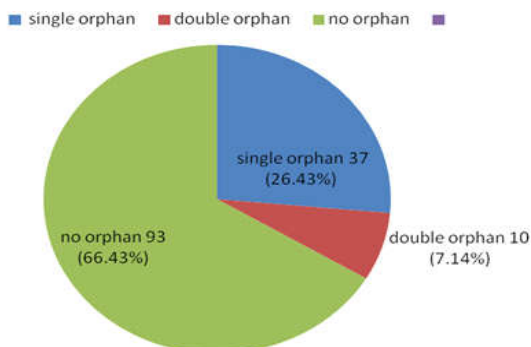


Fig. 1: Number of orphan children

Fig. 2: Mode of Transmission

and cough were among the common presenting complaints (Table 1). Anaemia, Lymphadenopathy and skin lesions were common examination finding (Table 2). Scabies, Papular pruritic eruption and pyoderma were commonest skin lesions (Table 3). Maximum number of children (51.42%) were in clinical stage-II, followed by 30.72% in clinical stage-III (Table 4). 35.72% children were in immunological stage-I, followed by 27.15% in immunological stage-III (Table 5).

Discussion

In present study male to female ratio of children was 1.86:1. This trend in sex distribution may be due to more concern for male children in our society as seen in other diseases also. Mean age of children was 7.67 years (SD \pm 3.5) in the present study. Shel A et al^[12] also found mean age of children 7 years (SD 3.4years). N Kumarasami et al [13] found that most perinatally infected children become symptomatic by 5 years of age. In our study 33.57% children were orphan. Out of which 7.1% lost their both parents. Before HIV/AIDS epidemic only 2% children in developing world were orphan but according to Foster et al this number has increased to 7 - 11%. In our study significant malnutrition (grade II,III and IV) was present in 72.14% children. No child was nutritionally normal. Rakesh Lodha [15] found 81.3% children had failure to thrive. In our study 97.86% children under 15 years of age were infected through vertical transmission, which is consistent with the findings of Agarwal D et al [16] 94%, Merchant R H et al [17] 86.6%. In our study fever was the most common symptom present in 60.7% children followed by loose stools. Agarwal D et al [16] and Rakesh Lodha et al [15] have reported fever as the most common symptom. Anaemia was the most common (85%) finding in present study. Adetifa I M et al and Claster S [18] also reported anaemia as the commonest finding. In our study lymphadenopathy and skin lesions were 59.2% and 47.14% respectively. Emodi J et al [19] have reported lymphadenopathy in 59% and skin lesions in 37% children. In our study maximum number of children (51.42%) were in WHO clinical stage II while Agarwal D et al [16] have reported maximum number of cases in WHO clinical stage I. In our study on the basis of immunological staging, maximum number of cases were in stage I and minimum number in stage IV, which is consistent with the findings of Shet et al [12] and Agarwal D et al [16].

Conclusion

This study concludes that out of 140 children, majority of children were infected through vertical transmission except 2 children who acquired infection through blood transfusion and in one child mode of acquiring infection was not ascertained. Mean age of presentation was 7.67 years. Majority of children were in WHO clinical stage II and immunological stage I. Recurrent and prolonged episodes of fever and diarrhoea, frequent respiratory tract infections and failure to thrive associated with anaemia were the main findings. Different types of skin lesions were seen in 47% cases. Scabies, popular pruritic eruptions, pyoderma and seborrhoeic dermatitis were the common skin conditions. Central nervous system involvement was seen in six children. 4 children had CVS involvement. One male child presented with pain and swelling of both knee and ankle joints. One child presented with Non hodgkins lymphoma. Severe anaemia and severe malnutrition was associated with poor prognosis, which was common in children who were orphan and in lower socioeconomic status. It was observed that HIV infection was transferred to the mothers of these children by their husbands who were working at distant places and staying there for longer time and through vertical transmission children were infected.

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