International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438

Various Clinical Manifestations of HIV among Age Group 18 Months to 12 Years of Age

Elizabeth Bandrapalli M.D, P. Jhansi Rani M.D.

Assistant Professor, Department of Pediatrics, Guntur Medical College, Guntur, India

Abstract: ***Background: The present study is being conducted in Guntur Medical College/GGH, Guntur to identify clinical features and most common presentations of HIV/AIDS so as to facilitate the early clinical diagnosis of the disease, thus giving a better quality of life to the child once diagnosed as HIV positive. Methods: This study is a cross sectional study which includes 50 children who are diagnosed to be HIV positive , admitted in the Department of pediatrics, Government general hospital, Guntur. Results: Various clinical manifestations were noted in our study group common being failure to thrive, recurrent respiratory infections, tuberculosis, chronic diarrhoeas. Conclusion: Majority of children in our study group had PEM associated with pallor which has an adverse effect on the outcome of HIV. Hence nutritional advise is essential which by improving the immunity plays crucial role in preventing infections thereby improving the long time survival of HIV positive children***

Keywords: HIV, immunodeficiency, tuberculosis, PEM.

Aims and Objectives

- To study Clinical profile of HIV in Children from Age Group of 18 Months to 12 Years.
- To identify the common Manifestations of HIV in Pediatric age Group.
- To indentify the commonly Associated Opportunistic infections in HIV positive Children.
- To know their outcome with ART.

1. Introduction

Children of today are the youth of tomorrow. If we allow the HIV/AIDS epidemic, slowly but surely wipe out the present generation from the face of the earth .This will impact our nation, continent and the world at large. Are we doing enough to prevent all these effects of global epidemic of HIV/AIDS, which is now pre dominantly affecting the developing world including India. AIDS was first recognized in USA in 1981, The Centre for disease control reported unexplained occurrence of pneumocystis carini pneumonia among homosexual adults in Los Angeles[1]. Within months, the disease became recognized in male and female injection drug users and thereafter it was also isolated in recipients of blood transfusion and haemophiliacs.

In 1982, a clinical entity characterized by profound loss of immune functions associated with a depletion of CD4+ helper T lymphocytes, formally designated as AIDS, was recognized .This newly described syndrome is caused by infection with human immunodeficiency virus. In 1983 HIV was isolated from a patient with lymphadenopathy and by 1984, it was demonstrated clearly to be causative agent of AIDS, called as HIV-1. In 1986, HIV-II was isolated from AIDS patients in West Africa[2]. In India, first AIDS case was detected in 1986 among commercial sex workers in Chennai[3]. In developed countries, AIDS in Paediatric age group constitutes around 2% of HIV infections, whereas in Asia and Africa, it constitutes to the extent of 15-20% of all cases. This is due to greater affliction of women in child bearing age group. In developing countries such as India, number of cases of paediatric HIV infection continues to rise due to increased prevalence of HIV infection in women. This is because of ineffective measures for prevention of perinatal transmission and of poor access to antiretroviral medication and safe breast milk substitute. According to estimates done by UNAIDS, the number of people living with HIV/AIDS is 35 million, in which children<15 years are 3.2 million[4,5]. Similarly in India by 2012-2013, the total number of HIV/AIDS cases was 20.89 lakhs in which children less than 15 years constitute 1.45 lakhs[6]. 75 percentage of children affected with HIV die before age of 5 years without an early diagnosis and management.

According to national surveillance, if this epidemic of HIV/AIDS is not controlled, in next 5 years, 1 in every 10 paediatric beds will be HIV positive. Hence, considering such a rampant spread of the disease and its major contribution to mortality and morbidity of children, the present study is being conducted in Guntur Medical College/GGH, Guntur to identify clinical features and most common presentations of HIV/AIDS so as to facilitate the early clinical diagnosis of the disease, thus giving a better quality of life to the child once diagnosed as HIV positive.

2. Materials and Methods

The present clinical study was conducted in Guntur Medical College /Government General Hospital, Guntur from August 2013 to September 2014.50 children between the age group of 1½ yrs to 12 yrs, who were found to be HIV positive on investigation, were included in present study. Among these children most of them had failure to thrive, prolonged fever, chronic diarrhea and rash.

During the study period, any child who had the following criteria was included in the study.

1) Age of Child from 18 months to 12 years.
2) Either of parent is HIV positive, child is also positive.

3) Child presenting with the following symptoms, Failure to thrive, Prolonged fever, Chronic diarrhea, Skin lesions , Swellings in neck, Recurrent respiratory tract infection
4) Asymptomatic child with HIV-I and II positive.

Age has been included from 18 months, reason being babies younger than this age can have a passive transfer of IgG antibodies from Mother and may have false positive HIV ELISA. Standard screening test for the diagnosis of HIV in our institute is ELISA. This solid phase assay is an extremely good screening test with a sensitivity of 99.5%.ELISA tests are generally scored as positive (highly reactive), negative (non reactive),Indeterminate (partially reactive).For the reasons, that sometimes false positive ELISA may be seen, once child is reactive by ELISA, must be confirmed by two other tests.The Immunodot SIGNAL HIV test and ASPEN Rapid tests are the one which are used in our institute for reconfirmation. Once patient is positive for all three then only he is diagnosed as HIV positive . Perinatal transmission being the most common mode of transmission, wherever possible once child is HIV positive, parents were tested for the same. In some cases parent's status could not be assessed because either they are expired or child is not staying with them. Failure to thrive is defined according to Indian Academic of Paediatrics for weight for age. Waterlow's classification is used to assess for height for age and weight for height .Prolonged fever is considered if it is persistent for more than 1 month duration with common causes of fever being excluded .Chronic diarrhoea is defined according to WHO criteria, as presence of three or more loose stools daily for a minimum of 14 days .Skin lesions ranging from non specific dermatitis, scabies seborrhic dermatitis ,eczema are included in the present study.

Persistent generalized lymphadenopathy is diagnosed as presence of enlarged lymph node in two or more sites for more than 3 months after excluding other causes .When a child has 6 or more upper respiratory tract infections in a year, is taken as repeated respiratory tract infections as per standard definition .In family history, if any contact with open case for tuberculosis is considered. Tuberculosis being most common associated infection with HIV, if present in family would be a leading history to suspect HIV positivity. Thus every child is taken a detailed history about tuberculosis in family, HIV status of parents, and whether they are alive or dead. Similarly status of siblings is taken to confirm the perinatal transmission of HIV disease. Regarding antenatal history, if mother had antenatal checkups and whether she was tested for HIV or not. If she was positive for HIV, what advice was given regarding pregnancy, delivery and lactation and whether she was started on any prophylaxis or not .Thus a child who is presented with 2 or more criteria described above and diagnosed as HIV positive is included in present study . Age of Child < 18 months, Immunodeficiency state other than HIV are excluded from present study. Immunodeficiency disorder can be primary or secondary. Primary immunodeficiencies are rare disorders. Secondary immunodeficiency following viral infections i.e., HIV is diagnosed by ELISA test and clinical symptoms. Other secondary immunodeficiencies like severe malnutrition, lymphoreticular malignancies, nephrotic syndrome and drugs like steroids are the conditions, if responsible for immunodeficiency, are excluded from the present study.

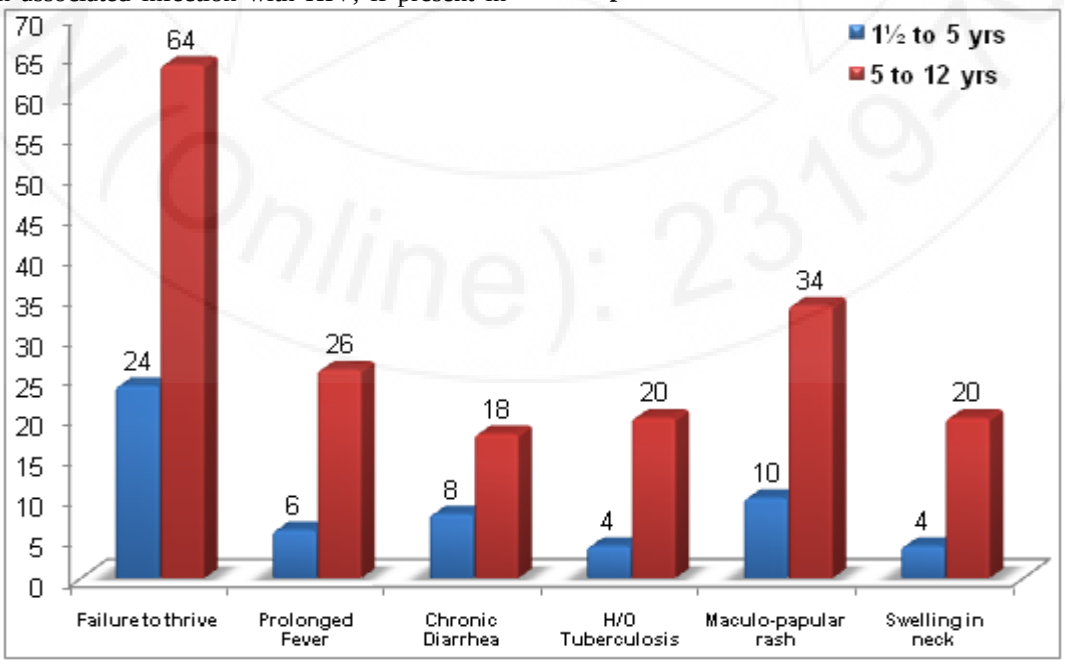
3. Observations and Results

In our study, 24% HIV Positive Children were from the age group of 1½ to 5 years, 76% were in the age group of 5-12 years. Out of total 50 cases 28(56%) were male children and 22(44%) were females. The male: female sex ratio is 1.27:1.

Distribution of Major Complaints

	1½ to 5 years	5 to 12 years	Total
Failure to thrive	12(24%)	32(64%)	44(88%)
Prolonged Fever	3(6%)	13(26%)	16(32%)
Chronic diarrhea	4(8%)	9(18%)	13(26%)
H/O Tuberculosis	2(4%)	10(20%)	12(24%)
Maculo-Papular rash	5(10%)	17(34%)	22(44%)
Swelling in Neck	2(4%)	10(20%)	12(24%)

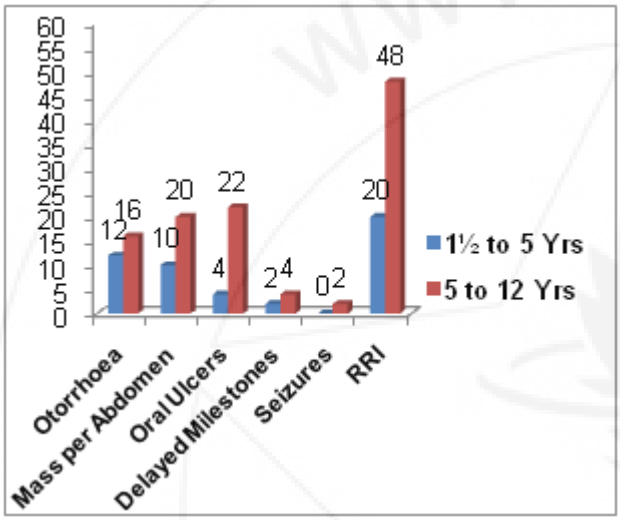
Graphical representation (Bar Chart) of Major Complaints:



Most common presenting major symptom in our study was Failure to thrive, 24% in the age of 1½ to 5 years and 64% in the age group of 5 to 12 years i.e., totally 88%. Second most common presenting symptom was Maculo-popular rash,10% in the age of 1½ to 5 years and 34% in the age group of 5 to 12 years i.e., totally 44%.

Table 4: Distribution of Minor Complaints

	1½ to 5 years	5 to 12 years	Total
Otorrhoea	6(12%)	8(16%)	14(28%)
Mass per Abdomen	5(10%)	10(20%)	15(30%)
Oral Ulcers	2(4%)	11(22%)	13(26%)
Delayed Milestones	1(2%)	2(4%)	3(6%)
Seizures	0(0%)	1(2%)	1(2%)
RRI	10(20%)	24(48%)	34(68%)



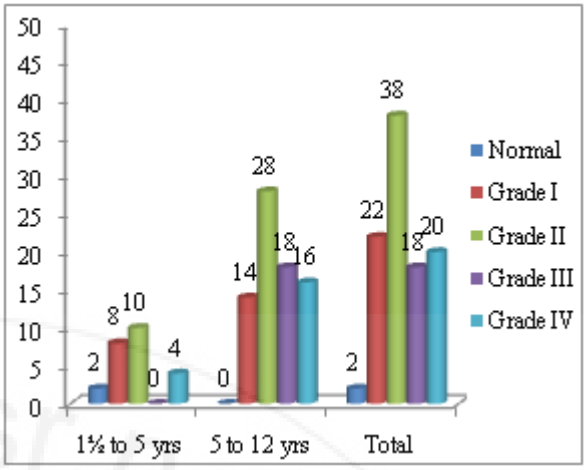
Graphical representation (Bar Chart) of Minor Complaints

Graphical representation (Bar Chart) of Minor Complaints

Most common presenting minor symptom in our study was repeated respiratory tract infection, 20% in the age of 1½ to 5 years and 48% in the age group of 5 to 12 years i.e., totally 68%. 30% of children showed mass per abdomen which included
hepatomegaly, splenomegaly and hepato splenomegaly. Some children presented with 2 or more minor complaints. In Our study 25(50 %) of children had single parents only .11(22%) of children lost their Parents . Both parents are alive in 14 (28%).Among 50 children, out of which 48(96%) were infected through Vertical Transmission (Mother to Child). It was observed that in 92% of children, both parents were found to be HIV positive and in 2% single parent was HIV positive. In 2% children the status was unknown. Among 50 children, out of which 48(96%) were infected through Vertical Transmission (Mother to Child).

Table XI: Anthropometry Assessment

IAP(Weight for age)	1½ to 5 years	5 to 12 years	Total
Normal	1(2%)	0(0%)	1(2%)
Grade I	4(8%)	7(14%)	11(22%)
Grade II	5(10%)	14(28%)	19(38%)
Grade III	0(0%)	9(18%)	9(18%)
Grade IV	2(4%)	8(16%)	10(20%)



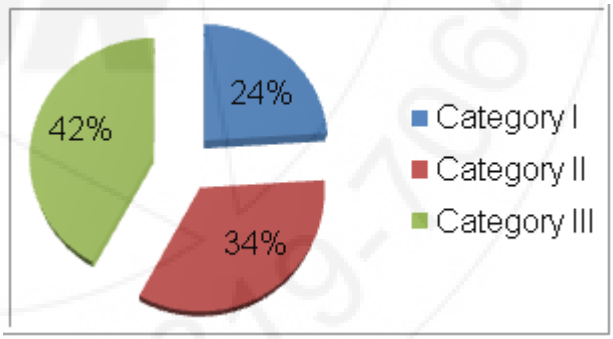
98% of children had PEM according to IAP criteria, out of which 22% had Grade I PEM,38% Grade II,18% Grade III and 20 % Grade IV PEM.

4. Findings on General Examination

On general examination, 94 % children had Pallor, 40% children had generalized lymphadenopathy 30% had mucocutaneous candidiasis,22% ASOM,16% had clubbing 14% had seborrheic dermatitis and 12% had scabies. Out of 50 children, no systemic involvement was seen in 22% of children. Per abdomen examination, 28% children had hepatosplenomegaly, 42% children had respiratory system involvement and 10% had CNS involvement. In 4% of children, CVS was involved.

Table XXI: CD4+ COUNTS

	1½ to 5 years	5 to 12 years	Total
Category I	1	11	12(24%)
Category II	1	16	17(34%)
Category III	10	11	21(42%)



Out of 50 children, CD4+ count was 24% in Category I, 34% in category II and 42% were in category III.

Table XXII: Opportunistic Infections

Name of the Infection	No of cases
Bacterial	20(40%)
Viral	5(10%)
Fungal	12(24%)
Protozoa	5(10%)

Out of 50 children, 20(40%) children were suffered with Bacterial opportunistic infections.

5. Discussion

The present study was conducted from August 2013 to September 2014(one year period) in the Department of Pediatrics , Government General Hospital (GGH) Guntur,. Laboratory facilities and ART centre are available in the same campus of GGH, Guntur. Total number of 50 children infected with HIV/AIDS who were admitted in the Department of Pediatrics, Govt. General Hospital, Guntur were studied during the above period. They were divided into two groups depending on their age because patients present in infancy have severe disease and early death, while children surviving beyond 5 years of age tend to have only moderate signs and symptoms and have longer survival.

This study describes the clinical manifestations and outcome of HIV/AIDS among children diagnosed at our hospital, to add to the emerging data about clinical manifestations of HIV infection among children in India. Out of 50, 12 are between the age group of 1½ to 5 years and 38 between 5 to 12 years with major symptoms being failure to thrive, maculo-papular rash, prolonged fever, chronic diarrhea, History of tuberculosis and neck swellings. In 88% of children, failure to thrive was the most common major symptom. In the studies done by Merchant et.al[7], Ramesh R.Pal et. Al[8] Emodi and G.O Okadar[9] , Dinesh kaul[10] , Rachita Dhurat et.al[11]pardhasaradhy et.al[12], And Valsan Philip verghese[7] failure to thrive is seen in 44.15%, 58% ,23.8%, 45.12%, 48.6%, 5%, 54.93%, respectively [4]. Our Present study shows higher value than the other studies because most of the children were living with single parent (mother) and 25% of children lost both their parents and became orphans. These children mostly belonged to low socio economic group, so prone to recurrent infections, diarrheal illness, malabsorption due to the direct effect of HIV on intestinal mucosa and also due to poor intake. Further, these children presented in advanced stage of HIV/AIDS . The next major symptom in our study was Skin lesions. The incidence of Skin lesions in the present study is 44%.In the studies of Merchant et al ,Okadar & Emodi , Dinesh kaul- A.V.Madhivanam, Rachita Dhurat and Ramesh R.Pal it was 22.10%, 20%, 12%, 19%, 24.9% 45.9% respectively . Lesions in our study included seborrheic dermatitis, maculopapular rash and scabies. Our results correlate with the studies done by Ramesh R.Pal et.al.Incidence of prolonged fever is the next major symptom seen in the present study, the incidence being 32%.In studies done by Merchant et al Emodi and G.O Okadar Dinesh kaul A.V Kulkarni Ramesh R.et al it was 12.63%, 50.79%, 9.76%, 46.5, 70.42%.The next major symptom in our study is the chronic diarrhea,the incidence being 26%. In studies done by Merchant et al Dinesh kaul & Sanak A.V Kulkarni Rachita dhurat et al it was 15.08%, 16.28%,51.5%, 27.2%, Our result correlates with studies done by Rachitadhurat et al. The next major symptom in our study was child with a History of tuberculosis, in our study 24% children had a history of tuberculosis. In the studies done by Valsan Philip verghese, Pardhasaradhy et al, Rachita dhurat, Ramesh R.pal, the incidence of 16%,6.6%,76.5%,22.75% was noted. Our result correlates with studies done by Ramesh R.Pal et al. Incidence of swellings in the neck in the our study was 24%. In studies done by Merchant et al it was 25.85%, Okadar is 36.09%.our result correlates with the studies done by Merchant et.al**.**

In the present study, more number of children presented with minor symptoms compared to studies done by Merchant et al, especially recurrent respiratory tract infection. In our studies the recurrent respiratory tract infection is 68%. In the studies done by Merchant et al A.V Madhivan Rachita Dhurat et al Ramesh R. Pol et al it was 8.42%, 2.6%, 24.3% 12.68%.Our Present study shows higher value than the other studies because of most of the children presented in advance stage of HIV/AIDS, delay in seeking medical treatment and poor nutrition. In the present study, 98% of children were exclusively breast fed. Among 50 children, 2% had normal weight for age according to IAP classification. Among the rest 22% had Grade I, 38% Grade II, 18% had Grade III and 20% had Grade IV PEM.

On general examination most common feature in the present study is Generalized lymphadenopathy, seen in 40% children. In studies done by G.O Okadar and Emodi, Rachita Dhurat, Livia Ferreira sores et.al. it was 58.73%, 38%, 34% .Our studies correlate with the studies of Rachita Dhurat et al. On systemic examination of the 50 children , the most common finding was involvement of respiratory system, seen in 42% of children. In the studies done by Vardhaman et.al ,Valsan 0Phillip Verghese et.al, Rachita et.al ,P.Pardhasarathy et.al, Ramesh R.Pol et.al ,it was 56%, 72%, 51.9%, 40%, 69.04%. Our findings correlate with P.Pardhasarathy et. Al. Upper respiratory tract infection, pneumonia and pulmonary tuberculosis, pneumocystis carini Pneumonia and Lymphoid Interstitial Pneumonia were respiratory manifestations.

Children with pneumonia presented with cough, fever, tachypnoea, crepitations and a pneumonic patch on chest x-ray. Pulmonary tuberculosis is suspected based on chronic cough and fever, failure to thrive, weight loss, persistent radiographic findings despite adequate antibiotic therapy. These children were further evaluated. We could not document presence of atypical mycobacteria or multi drug resistant tuberculosis, because of lack of culture facilities. Considering the high prevalence of HIV infection in tuberculosis in children as reported from Mumbai and Zambia studies. Tuberculosis should be regarded as sentinel illness for HIV infection. Pneumocystis carinii pneumonia was diagnosed based on findings of persistent cough, Tachypnoea, with minimal findings on auscultation, hypoxemia in pulse oximetry or arterial blood gas analysis, elevated serum lactate dehydrogenase, presence of diffuse infiltrate on chest radiograph and response to cotrimoxazole.

Lymphoid interstitial pneumonia was diagnosed on the basis of chronic cough and presence of reticulo nodular opacities on the chest radiograph, without hilar lymphadenopathy, persisting for more than 2 months and unresponsive to antimicrobial or anti tuberculous therapy. In our study 2% children in the age group of 1½ to 5 years showed features of PCP pneumonia and 2 children showed features of LIP. Small percentages of PCP/LIP cases are attributable to limited diagnostic facilities.

CNS involvement in our study was seen in 10% patients. In studies done by Philip Vargheese et.al 28% involvement was seen. In studies by Merchant et.al 4.56% involvement was seen. They included delayed milestones, neuro regression and status epilepticus, Tuberculoma, TB meningitis and cryptococcal meningitis and HIV encephalopathy. 2(4%) children showed delayed milestones. 1(2%) child presenting with HIV encephalopathy showed regression of mile stones.

The Mantoux test was positive in 5 children with 10 X 10 mm induration and less than 5 mm in remaining children.4 children in the age group of 1½ to 5 years children and 6 children in the age group of 5 to 12 years showed abnormal Liver function tests. 1 child in the age group of 1½ to 5 years,3 children in the age group of 5 to 12 years showed abnormal Renal function tests. In the present study, 50 children were categorized depending on CD4+ counts which show 24% in category I, 34% in category II and 42% in category III. Out of 50, 40 children are receiving Antiretroviral therapy with the first line regimen, at the ART centre. GGH, Guntur and are showing a dramatic increase in their CD4+ count in their follow up studies. During study, 3 children were died in the age group of 5 to 12 years.

6. Conclusions

The present study conducted in 50 HIV positive children between the age group of 18 mon to 12 yrs conclusively showed that the most common clinical manifestations of HIV in children are failure to thrive ,pulmonary tuberculosis ,skin lesions ,recurrent attacks of diarrhea and respiratory infections ,and generalized lymphadenopathy ,out of which failure to thrive is the predominant clinical feature .many children had tuberculosis with positive family history of tuberculosis signifying the need for screening of all HIV positive children and their family for tuberculosis. Majority of our children had PEM associated with pallor which has an adverse effect on the outcome of HIV. Hence nutritional advise is essential which by improving the immunity plays crucial role in preventing infections there by improving the long time survival of HIV positive children

7. Recommendations

1) To interrupt the transmission of HIV from mother to child, preventive measures should be taken from period of conception to delivery. Thus mother should be evaluated for HIV status in her antenatal checkups.
2) HIV is no more a fatal illness, but a treatable chronic infection. Early diagnosis and treatment by utilizing the services of PPTCT, VCTC & ART centres will help in prolonging the survival rate and preventing the opportunistic infection.
3) Paediatric HIV remains an evolving entity, with newer findings for the better management being discovered every day. Physicians taking care of a Paediatric HIV patient should try and remain updated with new information especially the clinical presentation in order to suspect, diagnose & provide quality medical care.

References

[1] HIV 2012/2013 www.hivbook.com Christian Hoffmann, Pg 1-761.
[2] A Nelson Text Book of Paediatrics, 19th Edition, Vol: 1, 2013, Elsevier Publishers 1427-1442.
[3] Ghai O.P, Piyush Gupta, Paul V.K. Essential Paediatrics Eighth Edition. CBS Publishers: 2013: 229-237.
[4] UNAIDS/WHO epidemiological fact sheets 2013.
[5] Worldwide HIV & AIDS statistics published by UNAIDS/WHO, July 2013.
[6] NACO, Epidemiological statistics of HIV/AIDS, India 2013.
[7] Merchant et.al. Clinical profile of HIV infection. Indian Paediatrics 2001, 38,241- 248.
[8] Ramesh R.Pol, TA.Shepur et al clinical laboratory profile of pediatric HIV, Indian journal of paediatrics, December 2007, 1071-1074
[9] Emodi & G.O.Okadar et al clinical manifestation of HIV infection at Nigeria.
[10] Dinesh Kaul and Janak A patel, clinical manifestations and Management of HIV paediatric infection. Indian journal of paediatrics
[11] Dhurat Rachita, et al, clinical manifestation of HIV infection. Indian paediatrics 2000; 37; 831-840.
[12] Verghes V P et al morbiditity and mortality in HIV positive children Pedi con 2006