ORIGINAL RESEARCH

Pattern of Mucocutaneous Manifestations in HIV Positive Children – A Study on 83 Patients

B. Balachandrudu[1], B. Roshini[2], V. Nivedita Devi[3]

ABSTRACT

Introduction: Skin disorders are extremely common in HIV individuals. CD4 counts are key markers for determining the disease process and the risk of opportunistic infections. Aim of the study was to evaluate the pattern of skin disorders in HIV positive children in relation to CD4 counts.

Material and Methods: A cross sectional study onHIV infected children attending Government General Hospital Kakinada over a period of 14 months. CD 4 counts were estimated and their severity and atypical presentations correlated with the CD4 counts.

Results: 83 patients were enrolled. Of which 39 were male and 44 were female. The most common skin disorder in the study was scabies infestation with secondary impetiginisation. Most common non infectious disorder was generalised xerosis followed by papular pruritic eruption and eosinophilic pustular folliculitis which was associated with a CD4 count below 250.

Conclusion: HIV infected children are more prone to develop common childhood infections such as impetigo,verruca and infestations such as scabies with a chronic course. Eosinophilic pustular folliculitis and oral candidiasis were seen in children with low CD4 counts.

Keywords: HIV, paediatric HIV, skin manifestations

How to cite this article: B. Balachandrudu, B. Roshini, V. Nivedita Devi. Pattern of mucocutaneous manifestations in HIV positive children – a study on 83 patients. International Journal of Contemporary Medical Research 2015;2(4):1009-1012

[1]Professor and HOD, [2]Final Year Junior Resident, [3]In Charge Professor, Department of DVL, Rangaraya Medical College, Kakinada, Andhra Pradesh, India

Corresponding author: Dr. B. Balachandrudu, Professor and HOD, Department of DVL, Rangaraya Medical college, Kakinada, Andhra Pradesh, India

Source of Support: Nil

Conflict of Interest: None

INTRODUCTION

Dermatological involvement in HIV establishes criteria for diagnosis, staging and prognostic significance of some complications. The incidence and severity of several common cutaneous diseases are increased in patients with HIV and this correlates in many instances with the absolute numbers of CD4 T cells.[1]

In India, skin manifestations among HIV-infected children show a prevalence rate varying from 30 to 80%.[2-5] The cutaneous manifestions include a wide variety of infections,inflammatory disorders and rarely neoplasms. These disorders show atypical presentations and are more severe, chronic, recurrent and refractory to treatment.[2] There is no single skin disease that is specific to children with HIV infection.[3]

Infections in HIV positive children can be distinguished from the identical infection in healthy children only by the severity and frequency of recurrence. Other non infectious cutaneous signs of HIV disease have been recognised, including seborrheic and atopic dermatitis, hypersensitivity vasculitis,nutritional deficiencies and drug eruptions.[3]

The present study is aimed to assess the pattern and severity of cutaneous disease in HIV AIDS children in relation to CD4 count.

MATERIALS AND METHODS

We carried a 14 month cross sectional study on 83 HIV infected children attending DVL OPD,Rangaraya medical college, Kakinada from January 2014 to April 2015. Children under 15 years of age, already confirmed to have HIV, were included in the study. Children less than 1 year of age and children exposed to HIV but not confirmed were excluded from the study. Detailed history was taken from all children with skin manifestations and complete physical examination including their height and weight was noted. A complete dermatological examination was done in all the patients. The diagnosis was made clinically and was confirmed by appropriate scraping,cultures, or biopsy wherever necessary. CD4 counts were recorded in all

patients. This study has the approval from the ethical committee of the hospital. Informed consent was taken from the parent or guardian of every patient.

Statistical analysis

The statistical analysis was done using Chi-square test for non parametrical data and if $p< 0.005$, then the test was considered statistically significant and a Student T-test while comparing two groups of unequal variance.

RESULTS

83 HIV positive children below 15 years (mean age 11.11 years) of age were included in the study period. 39 were male and 44 were female. 60 patients are receiving antiretroviral drug therapy. 12 children had CD4 counts below 250, 21 children had CD4 counts between 250 and 500, and 50 children had CD4 counts greater than 500. The demographic distribution of these patients are represented in table 1.

Infestations (27.7%) with scabies and pediculosis capitis were the most common dermatoses in the study. Viral infections with herpes simplex,varicella zoster, molluscum contagiosum human papilloma virus account for 27.7% cases. Fungal infections were noted in 8% cases. Isolated bacterial infections in the form of folliculits, furunculosis and impetigo was seen in 4.8% cases Non infectious dermatoses include generalized xerosis (8%), papular pruritic eruptions and eosinophilic pustular folliculitis (7.2%), seborrheic dermatitis (4.8%) and other nutritional deficiencies such as pityriasis alba (2.4%) and angular cheilitis (4.8%) and acne vulgaris (3.6%). The distribution of skin disorders and their relation to CD4 counts is represented in table 2

The prevalence of eosinophilic pustular folliculitis and oral candidiasis correlated well with CD4 counts less than 250 cells/mm3. Rest all were the common childhood skin infections but children with HIV are more prone to them.

DISCUSSION

Certain skin manifestations are considered markers for HIV infection and its progression. The use of Highly active anti retroviral therapy has markedly reduced the prevalence of mucocutaneous disorders.[4]

Infestations with Scabies (20.4%) and pediculosis capitits (7.2%) have the highest incidence in our study. They were irrespective of CD4 counts and are associated with secondary impetiginisation in three fourths of the cases. Recurrences were noticed in 7 of them. The most common type was classical scabies characterised by the presence of burrow in the finger webs followed by genital nodular scabies. No case of crusted scabies was reported in our study.

Pediculosis is particularly common, especially in children with low socio-economic status.[10] One case of pediculosis capitis was associated with cervical lymphadenopathy.

Viral infections account for 27.7% of dermatoses of which the most common was herpes labialis (8%). Five of them had their first episode and 2 had recurrent episodes. The most common feature of HSV in pediatric HIV infection is herpetic gingivostomatitis[9]

Multiple and confluent verrruca vulgaris over dorsa of hands and feet were noted in 7%.

Molluscum contagiosum (6%) presented as umbilicated skin coloured papules with pseudo koebnerisation. They were multiple and involved the face in all five of them.

Four cases of varicella and herpes zoster were reported in the study. There was no case of atypical or disseminated zoster. One case of ulcerative herpes zoster involving trigeminal nerve was seen in the study which healed with keloidal scarring.

Tinea capitis (4.8%) was the most common fungal infection in these children which was similar to a study in Ethiopia.[5] Most common type was gray patch tinea capitis followed by black dot tinea capitis. Most common dermatophyte isolated was Trichophyton rubrum. No case of inflammatory tinea capitis was observed in our study.

Oral candidiasis (3.6%) was seen in children with low CD4 counts less than 300 similar to the study in Ethiopia.[5] It has been suggested in several studies that oral

	CD4 counts <250	CD4 counts 250-500	CD4 counts>500	Total
Number of patients	12	21	50	83
Male	5	9	25	39
Female	7	12	25	44
Age	10.26	11.52	10.87	11.11
Mean CD4 cell count/mm3	93.83	382.14	677.93	

Table-1: Demographic characteristics of recruited patients

Manifestations	CD4 counts <250	CD4 counts 250-500	CD4 ounts>500	Total
Papular pruritic eruption	2	0	0	2
Eosinophilicpustular folliculitis	3	1	0	4
Scabies	0	4	13	17
Pediculosis	0	0	6	6
Impetigo/echthyma	0	2	2	4
Verruca	0	0	6	6
Molluscumcontagiosum	0	2	3	5
Herpes labialis	1	2	4	7
Varicella/herpes zoster	1	3	0	4
Oral candidiasis	2	1	0	3
Tineacapitis	0	1	3	4
Generalized xerosis	2	3	2	7
Viral exanthem	0	0	1	1
p.alba	0	0	2	2
Seborrheic dermatitis	0	0	4	4
Acne vulgaris	0	0	3	3
Angular stomatitis	1	2	1	4

Table-2: Distribution of disorders in HIV infected children with CD 4 counts

candidiasis is a marker of rapid HIV disease progression and death.[8]

Isolated impetigo,furunculosis and echthyma were observed in 4% cases. The most common organism isolated was staphylococcus aureus.

Generalised xerosis was the most common non infectious dermatoses (8%) of study and could be due to adverse effect of antiretroviral therapy or associated nutritional deficiencies in these children.

Papular pruritic eruption is seen as itchy papules over extremities and eosinophilic pustular folliculitis presenting as multiple folliculocentric itchy pustules together constitute for 7.2% of cases in the study. They occurred with low CD4 counts as observed in similar studies done in Ethiopia.[5] and also was similar to studies done in adults in Hadoti region.[10-15]

Seborrheic dermatitis was observed in 4.8% cases as yellow greasy scales over the scalp.Nutritional deficiencies such as pityriasis alba and angular cheilitis were also observed in the study.

We did not have any case of Kaposi sarcoma in our study as it is very rare in children[12] and among Asians.

Skin infections and infestations are the commonest dermatoses in our study like in many other studies done in Ethiopia and Tanzania.[5,6] Depletion of Langerhans cells makes them prone to infections.[7]

Majority of the children in the study population belong to orphanage homes with poor resource facilities and unhygienic settings which further adds up to the increased prevalence of infections in the study.

This study also shows that the prevalence of skin diseases in children increases with immunosuppression.

CONCLUSION

As such children are vulnerable to common skin infections. HIV infected children are even more susceptible population and often present with multiple, atypical and recurrent skin infections owing to the poor socioeconomic status, overcrowding, poor personal hygiene in most of our population, apart from the immunosupression by HIV Infection.

REFERENCES

1. C.B.Bunker, F.Gotch HIV and the skin; Rook's textbook of dermatology, 8th edition
2. Pizzo NS. Mucocutaneous disease in pediatric human immunodeficiency virus infection. Pediatric clinic north Am 1991 ;38:977-90
3. Dover JS, Johnson RA. Cutaneous manifestations of human immunodeficiency virus infection. Part 2. Arch Dermatol. 1991;127: 1549-58
4. Maurer T, Rodrigues LK, Ameli N et al. The effect of highly active antiretroviral therapy on dermatologic disease in a longitudinal study of HIV type 1-infected women. Clin Infect Dis 2004; 38:

579–584
5. Yichalal Endayehu, Amha Mekasha and Firehiwot Daba. The pattern of mucocutaneous disorders in HIV infected children attending care and treatment in Tikur Anbesa specialized hospital, Addis Ababa, Ethiopia. Endayehu et al. BMC Dermatology 2013, 13:12
6. Panya MF, Mgonda YM, Massawe AW: The pattern of mucocutaneous disorders in HIV-infected children attending care and treatment centres in Dar es Salaam, Tanzania. BMC Public Health 2009, 9:234–241
7. Josephine M, Issac E, George A, Ngole M, Albert SE: Patterns of skin manifestations and their relationships with CD4 counts among HIV/AIDS patients in Cameroon. Int J Dermatol 2006, 45:280–284.
8. Kline MW. Oral manifestations of pediatric human immunodeficiency virus infection: A review of the literature.Pediatrics 1996;97:380-8.
9. Berger T. Herpes virus infections and HIV disease. Clin Dermatol 1991;9:79-85
10. El Hachem M, Bernardi S, Pianosi G, Krzysztofiak A, Livadiotti S, Gattinara GC. Mucocutaneous manifestations in children
11. with HIV infection and AIDS. Pediatr Dermatol 1998;15:429-34.
12. Abhinandan H.B, Suresh Kumar Jain, Asha Nyati, Ramesh Kumar, Manali Jain, Jitendra Bhuria, Raghavendra K.R. Cutaneous manifestation of HIV-infection in relation with CD4 Cell counts inHadoti Region. Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 36, September 9; Page: 7003-7014.
13. Orlow SJ, Cooper DC, Petrea S, Kamino H, Popescu V, Lawrence R, et al. AIDS associated Kaposi's sarcoma in Romanian children. J Am Acad Dermatol 1993;28:449-53.
14. Haase AT. Population biology of HIV-1 infection: Viral and CD4+ T cell demographics and dynamics in lymphoid tissues.Annu Rev Immunol 1999;17:625-56.
15. Pol RR, Shepur TA, Ratageri VH. Clinico-laboratory profile ofpediatric HIV in Karnataka. Indian J Pediatr 2007;74:1071-5.
16. Shah SR, Tullu MS, Kamat JR. Clinical profile of pediatric HIV infection from India. Arch Med Res 2005;36:24-31