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Research Article

Pattern of muco-cutaneous manifestations in HIV infected children at tertiary care hospital, north Karnataka, India

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ABSTRACT

Background: Mucocutaneous diseases are more common children with HIV infection than normal population. These develop a wide variety of infectious and inflammatory diseases of the skin. In some cases, disorders of the skin or mucous membrane may provide an early clue to the presence of HIV infection. Objective: To determine the prevalence and pattern of mucocutaneous manifestation in HIV infected children.
Methods: All serologically positive children admitted in paediatric ward of S. Nijalingappa Medical College, Bagalkot, between the age group of 18 months to 14 years were studied from October 2010 to March 2012 (18 months period). Clinical information was collected using standard questionnaire.
Results: 85 children who fulfilled inclusion criteria were enrolled in the study. 57 children had mucocutaneous manifestation and most of them were aged more than 5 years. The most prevalent mucocutaneous disorders were infectious dermatosis. Most of them were seen with WHO stage III and IV, and with moderate and severe immunosuppresion. Two or more mucocutaneous disorders were found in moderate and severe immunosuppresion.
Conclusions: The prevalence of mucocutaneous disorders is high in HIV infected children with varied pattern. Advanced immunosuppresion is highly associated with a wide spectrum of mucocutaneous disorders.

Keywords: Cutaneous, HIV infection, Immunosuppresion

INTRODUCTION

As the world enters the fourth decade of the Acquired Immunodeficiency Syndrome (AIDS) epidemic, the evidence of its impact is undeniable. Infection with the Human Immunodeficiency Virus (HIV) is now a major public health problem for both developing and developed countries as it has dramatically increased the global burden of disease. Disorders of the skin and mucous membrane occur frequently during the course of the HIV infection and approximately 90% of the patients will develop one or more skin diseases during the course of their illness and 37% of patients presents with skin lesions as a marker of HIV infection.[1-5]

Skin infections in patients with HIV may have atypical presentation, tend to be more severe and may be inaccurately diagnosed. This may lead to poor response to therapy compared with immunocompetent children and to have a high rate of recurrence.[1-4] The incidence, severity, and number of skin lesions increase as immune function deteriorates. The commonly reported dermatological manifestations in children are infections (Fungal- candida, seborrheic dermatitis, and bacterial, viral), infestations, inflammatory lesions, drug eruptions and lesions associated with nutritional deficiencies.[6,7] So, early recognition of such features is important for an early diagnosis and also to assess the prognosis of HIV infection.

Till now, there are no data regarding prevalence and pattern of mucocutaneous disorders among HIV infected children. Thus, the objective of this study is to determine the prevalence and pattern of mucocutaneous manifestation in HIV infected children.

METHODS

All serologically positive children admitted in paediatric ward of S. Nijalingappa Medical College, Bagalkot, between the age group of 18 months to 14 years were studied from October 2010 to March 2012 (18 months period). Children below the age group of 18 months were excluded because of diagnostic difficulties and children above 14 years of age who being managed on the adult clinic were excluded from the study. The study is a prospective study and subjects were enrolled consecutively till the time bound. 85 children with confirmed HIV and who fulfilled the inclusion criteria were included in the study.

All subjects had a complete history and thorough physical examination. Dermatological examination was done in daylight by the dermatologists. Diagnosis of most dermatoses was done clinically and wherever necessary diagnostic procedures (KOH, gram stain, culture and sensitivity) from skin were done to confirm diagnosis. Clinical staging was done according to the WHO paediatric staging of HIV/AIDS. While immunologic classification was done according to the CDC immunologic classification for HIV infected children.

The informed written consent of parents/guardian and confidentiality has been assured. Ethical committee clearance was taken before the study from the institutional research board. Data was collected using standard pretested questionnaire.

RESULTS

A total of 85 confirmed cases of HIV infected children were studied during the study period. The age range was from 18 months to 14 years with mean age of presentation was 6.5 years. The maximum cases in the study were males, constituting 63.5% (54) i.e. 2/3 of cases. Overall 57 (67.06%) children had mucocutaneous disorders. Almost males and females were equally affected with one or more mucocutaneous lesions. These lesions were more common in children aged >5 years.

There was a wide variety of mucocutaneous disorder as shown in Table 1. Infectious dermatitis accounted for the majority of mucocutaneous disorders (48 children-84.2%) while non-infectious was seen in 36 children (63.16%). Many children had multiple skin lesions and were therefore counted more than once in certain situations.

Dry scaly skin (24.56%) was the most common non-infective cutaneous presentation. This manifestation may be because of nutritional dermatosis. This was followed by papular urticaria and seborrheic dermatitis. The drug rash was seen in 4 children induced by nevirapine. Among the infective causes, oral candidiasis (28.07%) is the most common presentation followed by Scabies. Hypopigmented patches were due to healed scabies and herpes zoster. Hyperpigmented patches were due to healed pyoderma, healed chicken pox lesions and herpes zoster. One child (1.75%) had epidermolysis bullosa going for necrotising fasciitis. The prevalence of mucocutaneous disorders was highest in the advanced paediatric WHO stage III and IV. Similarly, highest prevalence of mucocutaneous disorders was seen with severe immunosuppression according CDC criteria (Table 2). Multiple skin lesions (>2) were seen with severe immunosuppression and with WHO stage III and IV.

Table 1: Showing mucocutaneous manifestations (n=57).

Skin lesion	No. of cases	%
Non-infectious/inflammatory dermatosis	**36**	**63.16**
Dry scaly skin	14	24.56
Papular urticaria	10	17.54
Seborrheic dermatitis	04	07.02
Atopic dermatitis	04	07.02
Drug rash	04	07.02
Infectious dermatitis	**48**	**84.21**
Oral candidiasis	16	28.07
Scabies	08	14.04
Hypopigmented patches	05	08.77
Hyperpigmented patches	04	07.02
Herpes zoster	04	07.02
Pyoderma	03	05.26
Folliculitis	03	05.26
Molluscum contagiosum	02	03.51
Paronychia	02	03.51
Epidermolysis bullosa	01	01.75

Table 2: Mucocutaneous disorders according to WHO staging and CDC criteria (n=57).

Staging	No. of cases (n=57)	%
WHO paediatric stage		
I	03	05.20
II	11	19.29
III	26	45.61
IV	17	29.80
Immunosuppression level by CDC		
No evidence (Category I)	12	21.06
Moderate (Category II)	19	33.33
Severe (Category III)	26	45.61

Figure 1: Herpes zoster.

Figure 2: Hypopigmented patches.

Figure 3: Papular urticaria.

Figure 4: Molluscum contagiosum.

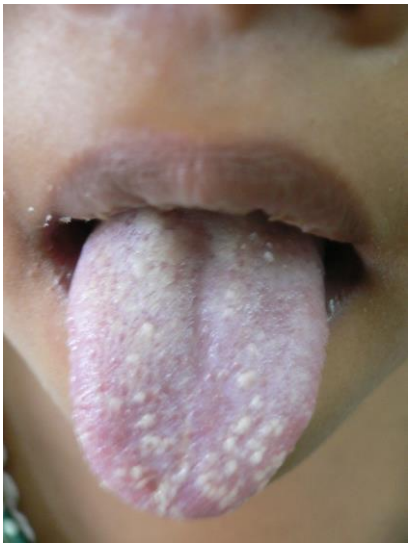

Figure 5: Oral candidiasis.

Figure 6: Epidermolysis bullosa with necrotising fasciitis.

DISCUSSION

In the initial stage of HIV infection, macular rash is frequently observed. During the asymptomatic phase, the patients may presents with dry scaly skin, seborrheic dermatitis. Herpes simplex and herpes zoster may develop into ulcerating and necrotising forms especially in patients with advanced immunodeficiency. Because of the obvious visibility of the integument, these lesions are often the presenting manifestation of HIV-related disease.[8] The cutaneous lesions are frequently related to the sequelae of impaired immunity and include opportunistic infections and neoplasms as well as dramatic exacerbations and development of rapidly progressive and severe manifestations in pre-existing, normally benign dermatosis.

In our study, 57 (67.06%) children had a wide range of mucocutaneous disorders. High prevalence of skin lesion was also reported from other studies.[9] In our study, children aged less than 5 years of age least affected than older children which similar to Luminus et al.[10] This shows that longer the duration of survival has more skin disorders may be because of malnutrition, and are more prone for opportunistic infections and infestations.

In this study, the prevalence of mucocutaneous disorders among children with severe, moderately severe and no evidence of immunosuppression was 45.61%, 33.33% and 21.06%, which is similar to Wananukul et al.[11] study, where severe, moderately severe and no evidence of immunosuppression was 52%, 28% and 20%. Most children with moderate and severe immunosuppression have two and more mucocutaneous disorder[11]. Similarly our study showed two and more mucocutaneous disorders were more common in advanced immunosuppression. All other studies including ours indicate that the risk of acquiring mucocutaneous disorders for HIV infected children rises as level of immunosuppression advance.

In this study Infectious dermatosis are the most frequent cause of mucocutaneous disorders among HIV infected children like other studies[12]. In this study, the most common infectious dermatosis was superficial fungal infections (oral candidiasis) and the most common non-infectious dermatosis was dry scaly lesion followed by Pruritic Papular Eruption (PPE) similar to another study.[12] The increased incidence of skin infections is attributed to the depletion of the Langerhan's cells responsible for the mucocutaneous immunological system. Non-infectious dermatosis also become prevalent when there is immunosuppression.[9,12]

In most of the cases of AIDS, iatrogenic cutaneous disorders associated with toxic or allergic drug reactions are seen. With increasing incidence of paediatric HIV infection and with therapeutic prolongation of survival, drug reactions (Nevirapine and Co-trimoxazole) are likely to be more common. New or previously unrecognized cutaneous manifestations of paediatric AIDS are also likely to emerge.[13]

Children with severe HIV infection commonly present with failure to thrive, diarrhoea and repeated infections. In this clinical setting they are prone to develop nutritional deficiencies such as zinc deficiency, scurvy, pellagra, riboflavin and other vitamin deficiencies. Kwashiorkar like manifestations have been observed in chronic HIV infection.[13]

With the introduction of Highly Activated Antiretroviral Therapy (HAART), there has been dramatic decrease in the opportunistic infections, infestations and improvement in many dermatological manifestations like oral candidiasis and seborrheic dermatosis.[14-16] However, some cutaneous disorders have paradoxically worsened after initiation of HAART like herpes zoster, mycobacterium infections and drug reactions.[17]

CONCLUSION

Mucocutaneous disorders may be the first presenting sign of HIV infection or may serve as a prognostic marker and an ominous sign of the deterioration of the child's immunodeficiency. New or previously unrecognised cutaneous manifestations of paediatric AIDS are likely to emerge.

From the study it can be concluded that there is a high prevalence of mucocutaneous disorder with varied pattern in HIV infected children. Most of the mucocutaneous disorders were secondary to infectious causes. Children with advanced immunosuppression are suffering from a wide spectrum of mucocutaneous disorders. Familiarity with the various dermatologic presentation of paediatric AIDS can result in earlier diagnosis and treatment of the disease and prolongation of patient's life with improving quality of life.

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