

Review Article

## Clinical Overview of dermatological Conditions in HIV

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**Abstract:** Among HIV seropositive patients Kaposi's sarcoma, Herpes zoster, Herpes simplex, and pruritic maculopapular rash are common according to WHO positive predictive value for diagnosis of HIV is 71-98%.Hiv associated with many dermatological conditions spectrum of skin conditions includes skin findings associated with primary HIV infection and a broad range of skin problems related to the immune deficiency of advanced AIDS. Recognition of characteristic eruptions can facilitate early diagnosis of HIV. A broad variety of neoplastic, infectious and non-infectious diseases can manifest in the skin and may alert the clinician to decline of the immune system. In this review, we describe a general clinical approach to the HIV-infected patient presenting with common skin complaints, providing a differential diagnosis for commonly encountered syndromes and a review of recently published literature relevant to this area.

**Keywords:** Kaposi's sarcoma, Herpes simplex, HIV.

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### Introduction

Among HIV seropositive patients Kaposi's sarcoma, Herpes zoster, Herpes simplex, and pruritic maculopapular rash are common according to WHO positive predictive value for diagnosis of HIV is 71-98%.Hiv associated with many dermatological conditions spectrum of skin conditions includes skin findings associated with primary HIV infection and a broad range of skin problems related to the immune deficiency of advanced AIDS [1].Recognition of characteristic eruptions can facilitate early diagnosis of HIV. A broad variety of neoplastic, infectious and non-infectious diseases can manifest in the skin and may alert the clinician to decline of the immune system [2].In this review, we describe a general clinical approach to the HIV-infected patient presenting with common skin complaints, providing a differential diagnosis for commonly encountered syndromes and a review of recently published literature relevant to this area.

Diagnosis of cutaneous disease can be challenging. The approach to diagnosis of skin lesions includes the assessment of location, extent, primary lesions, and secondary changes. The extent and severity of lesions can be helpful diagnostic clues and can provide insight regarding the severity of immunosuppression.

### Approach to cutaneous lesions associated with HIV

Plaques can be associated with infectious diseases like cellulitis or intertrigo, as well as non-infectious causes. Inflammatory diseases like popular eczema can present with localized as well as widespread papules coalescing to plaques which are often associated with scaling and pruritus. Other common rashes associated with HIV include seborrheic dermatitis, which presents as erythematous papules and plaques with greasy scale, usually in a seborrheic distribution (oily and hair-bearing skin). There can be an overlap with psoriasis which typically shows well-demarcated plaques with silvery scale on the extensor surfaces; nail findings, including pitting and oil spots, can be helpful in distinguishing the two entities.

### Overview of Physical Findings

Vesicles and bullae are elevated lesions filled with clear fluid, also distinguished by size of less or greater than 1 cm, respectively [3]. Their presentation should raise concern for underlying infectious disease. Grouped vesicles on an erythematous base are a common presentation for herpes simplex, while herpes zoster often presents similarly in a dermatomal distribution. Both diseases can be widespread or generalized in case of severe immunosuppression. A honey-colored crust is a common finding in bullous impetigo, while bullous tinea or candida will present with very superficial erosions. Of course other causes including contact dermatitis, edema, or pressure bullae need to be ruled out. Follicular inflammatory papules and pustules are suggestive of folliculitis.

Macules and patches are defined as flat, circumscribed skin lesions, which can present in localized as well as widespread patterns [3]. Macular and morbilliform erythematous eruptions are often associated with drug reactions.

#### **Viral infections [4]**

Various herpes viruses can be a problem. There may be chronic perianal and perioral herpetic ulcers caused by HSV, recurrent typical dermatomal zoster caused by herpes zoster virus (HZV) and disseminated CMV infection.

- Recurrent oral and anogenital HSV are common in patients with HIV. In children, herpes simplex stomatitis is more common than varicella-zoster virus (VZV).
- Acute disseminated varicella-zoster infection with atypical manifestations may occur. They include hyperkeratotic papules, folliculitis, verrucous lesions, chronic ulcerations, disseminated ecthyma lesions and chronic varicella-zoster infection mimicking BCC. Varicella causes few problems in most children with HIV but occasionally it can cause fulminant chickenpox, pneumonitis, hepatitis, shingles and encephalitis[12].
- EBV has been implicated in the pathogenesis of oral hairy leukoplakia. It produces filiform white papules on the sides of the tongue. White plaques may be confused with oral candidiasis, lichen planus and geographic tongue.
- CMV produces ulcers in the perineal region. CMV infection has a poor prognosis with HIV.
- Widespread or recalcitrant warts may occur on the oral mucosa, the face, the perianal region and the female genital tract. The perianal and cervical

lesions may be difficult to treat. Large plantar warts are caused by HPV-66.

- The molluscum contagiosum virus produces small papules with central umbilication.

#### **Fungal infections [5, 6]**

- Recurrent vaginal candidiasis is the most common presentation of HIV infection in women. Perhaps after excluding diabetes, HIV should be considered.
- In adults, generalised dermatophytosis or tinea capitis, which is typically caused by *Trichophyton rubrum*, may suggest HIV infection.
- Pityriasis versicolor may be persistent and recurrent.
- Deep fungal infections such as coccidiomycosis, may also produce lesions on the skin.

#### *Bacterial infection [7]*

- Impetigo and folliculitis may be recurrent and persistent, especially in children.
- Disseminated furunculosis, gingivitis, gangrenous stomatitis and abscess formation may occur.
- Tuberculosis is more common in HIV infection. Mycobacterium infection is not just TB but, in endemic areas, leprosy may appear, probably in the lepromatous form as TB leprosy infers an immunological response.
- Bacillary angiomatosis, which is caused by *Bartonellahenselae* and rarely by *Bartonellaquintana*, usually produces red papules and nodules.
- Infection may occur with unusual species of mycobacterium such as *Mycobacterium avium*.
- Patients with HIV infection with primary syphilis tend to have multiple ulcers compared with patients who are not infected with HIV. Rapid progression of secondary syphilis to tertiary syphilis occurs with HIV[16]

#### *Kaposi's sarcoma [8]*

This was the first reported malignancy associated with HIV infection. It begins as pink macules that disseminate and become palpable. Three types have been identified - patch, plaque or nodular grade. Mucosal involvement is common but visceral disease is uncommon (affecting about 10% at diagnosis) and investigation for such involvement is not necessary in the absence of symptoms.

#### *Other malignancies [9]*

HIV increases the risk of various malignancies, including primary lymphoma of the

central nervous system (CNS), undifferentiated non-Hodgkin's lymphoma, squamous cell carcinoma, anorectal carcinoma and cutaneous malignancies. AIDS-defining cancers (Kaposi's sarcoma, non-Hodgkin's lymphoma and cervical cancer) with strong links to immunosuppression have reduced in incidence with the increased use of ART.

Anal carcinoma and cervical intraepithelial neoplasia are associated with HPV. They tend to be more progressive and aggressive.

- An increase in squamous cell carcinoma of the anal mucosa has been reported, especially in young men who have sex with men with HIV infection.
- Intraoral or multiple squamous cell carcinomas, Bowen's disease and metastatic basal cell carcinoma (BCC) have occasionally been reported in patients with HIV[8]. The usual dictum about BCC is that it does not metastasise. However, 'eruptive' BCC has been reported, in which multiple BCCs have developed following the appearance of a single lesion in a patient with HIV[8].
- Malignant melanoma in patients with HIV appears to be more aggressive[10,11].

#### *Other skin diseases [12, 13]*

- Seborrhoeic dermatitis or eruptions like it are seen in many patients with AIDS. The eruption has widespread inflammatory and hyperkeratotic lesions and may progress to erythroderma in some patients. The incidence may be higher in patients with AIDS-related dementia or CNS disease.
- Psoriasis and reactive arthritis are more common. In some cases, existing psoriasis may become more severe with disseminated plaques and pustules (psoriatic pustulosis).
- The typical skin lesions of pityriasis rosea may be seen.
- Acquired ichthyosis may begin on the lower extremities and spread in advanced disease.
- Pruritic papular eruption (PPE) is a common cutaneous manifestation with HIV. Aphthous ulcers may be severe.
- Thrombocytopenic purpura, vitiligo, alopecia areata, sicca syndrome, pemphigoid and other autoimmune blistering diseases have been reported with HIV disease.
- Atopic disease may be reactivated. Atopic eczema can be severe in children.

- Urticaria may occur primarily or as a drug eruption. Cold urticaria has also been associated with HIV disease.
- Cutaneous vasculitis has been reported.
- Photosensitivity is more prominent. Photo-induced lichenoid drug reactions may be seen, especially on dark skin.

#### *Hair and nails [15]*

- Diffuse alopecia or alopecia areata may be inflammatory and permanent.
- Generalised alopecia can occur after treatment with indinavir, an antiretroviral agent.[16]
- Elongation of the eyelashes and softening and straightening of the scalp hair may be seen.
- Beau's lines, telogen effluvium and pallor of the nail beds may accompany any chronic illness.[17]
- Zidovudine may produce longitudinal, transverse, or diffuse melanin pigmentation of the nails but nail pigmentation has also been observed in patients with HIV who have never received the drug.[18]
- Proximal subungual onychomycosis is highly suggestive of HIV disease.[19]

#### *Management*

Management is as for the particular skin condition plus specific treatment for the HIV. Treatment may have to be more prolonged and aggressive than normal. Immunomodulatory therapy may be very useful in the treatment of viral infections associated with HIV[20,21]. Imiquimod is useful for treating anogenital warts in HIV-positive patients and may help to prevent progression to anal cancer [22]. It is also useful in controlling molluscum contagiosum. In KS, treatment options include ART, local radiotherapy or intravesical vinblastine for symptomatic or cosmetic improvement in early stages and chemotherapy in the advanced stage [23].

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