# Epidermodysplasia Verruciformis-Like eruptions manifesting as Cutaneous Immune Reconstitution Inflammatory Syndrome: A case report in a female with HIV infection in North-Central Nigeria.

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**ABSTRACT**

The Immune Reconstitution Inflammatory Syndrome (IRIS) refers to the paradoxical worsening or appearance of a new clinical condition in a subset of patients with the Human Immunodeficiency Virus (HIV) infection after commencement of Highly Active Anti-Retroviral Therapy (HAART). There are various infectious, inflammatory, autoimmune and neoplastic conditions affecting the skin which can manifest as IRIS and are largely under reported in sub-saharan Africa.

We report the case of a thirty year old woman with HIV infection who presented with Epidermodysplasia Verruciformis-Like (EVL) lesions a few months after she commenced HAART.

**Keywords:** Epidermodysplasia Verruciformis-Like, HAART, IRIS

## INTRODUCTION

The goal of HAART in HIV-infected individuals is immune reconstitution. However, some individuals experience an aberrant manifestation of this effect termed Immune Reconstitution Inflammatory Syndrome (IRIS) which is also known as immune restoration disease. This phenomenon may be triggered by a pre-existing antigen or pathogen after either initiation/re-initiation of HAART or change to more active HAART regimen1.

The risk factors for IRIS include an advanced state of immunosuppression (low CD4+ count/high viral load) and high infective antigen burden as well as disseminated Opportunistic Infection (OI) at ART initiation. These risk factors are prevalent in a substantial proportion of patients with newly diagnosed HIV especially in developing countries who usually present late to the hospital due to a various factors such as suboptimal access to HIV care and health services and stigmatization2. Other risk factors are a genetic predisposition, shorter duration of OI therapy prior to commencement of HAART, a rapid fall in HIV viral load and a rapid rise in CD4+ count levels3.

Cutaneous immune reconstitution inflammatory syndrome has been described in association with a range of infectious, inflammatory, autoimmune and neoplastic disorders. Skin disorders are not uncommon in HIV-infected patients and the skin is not surprisingly the most frequent organ to manifest IRIS, accounting for 52–78% of all events4,5,6.

Epidermodysplasia Verruciformis-Like (EVL) skin eruption is a rare disorder that occurs more frequently in patients with immunosuppressive disorders such as HIV7. This is due to an impaired Cell-Mediated Immunity in the affected patient.

It is also referred to as Acquired Epidermodysplasia Verruciformis and it manifests clinically by the development of flat warts (disseminated scaly and hypopigmented macules and papules) which are caused by the Human Papilloma Virus (HPV) subtypes 5 and 8. Histologically, acanthosis and the presence of blue cells in the spinous and granular layers in the dermis can be seen8.

## CASE PRESENTATION:

A 30 year old Tiv housewife was referred to the Dermatology clinic from the HIV clinic after she complained of numerous hypopigmented eruptions on both upper limbs but worse on the left upper limb. They were painless and non-pruritic. Patient was mostly bothered about the cosmetic appearance of her skin and was the reason why she was referred to the Dermatology clinic.

The lesions consisted of numerous hypopigmented macules and papules which also exhibited Koebnerization. They appeared like pityriasis

versicolor lesions and were distributed mostly on the distal and sun-exposed parts of the affected limbs. There were no other lesions on the skin except for healed Pruritc Papular Eruptions. There were no abnormalities detected on physical examination of other systems.

She was diagnosed to have HIV infection 6 months prior to presentation and appearance of the lesions. She had other laboratory investigations such as Full Blood Count, Liver Function Test, Serum Urea and Creatinine, HBsAg and Anti HCV which were normal.

She commenced HAART (Tabs Zidovudine, Lamivudine and Nevirapine ) two weeks after she was diagnosed to be HIV positive and did not notice any of the hypogimented lesions but had Pruritic Papular Eruptions (PPEs) at the time of diagnosis which had resolved when she presented to the Dermatology clinic. Her initial CD4+ count (at diagnosis of HIV infection) was 40 cells/µL and a repeat done 6 months after (at presentation to the Dermatology clinic) was 461 cells/µL. She declined having a skin biopsy.

She was counselled adequately on the nature of the skin disorder, need to continue HAART and benefits of sun-protection of the affected parts of the body. She was also billed to have follow-up clinics for skin surveillance.

## DISCUSSION

Following the advent of HAART, the Immune Reconstitution Inflammatory Syndrome has been a recognized phenomenon due to the worsening or unmasking of clinical diseases (including infectious, inflammatory, autoimmune and neoplastic disorders) due to an exaggeration of the immune response in a subset of HIV infected patients. The various organs of the body are affected and the skin is not left out as is the case in this patient who presented with Epidermodysplasia Verruciformis-Like eruption.

It may be difficult to distinguish IRIS-associated flares of inflammation from active opportunistic infections or drug reactions. However, a good clinical evaluation and baseline investigations including a HIV viral load/CD4+ count would be helpful as there would expectedly be a fall in the HIV viral load and a rise in CD4+ count in patients with IRIS.

Epidermodysplasia verruciformis-Like eruption is a rare cutaneous manifestation of the human papilloma virus infection which causes distinctive hypopigmented skin lesions which appear like pitrriasis versicolor in sun-exposed areas.

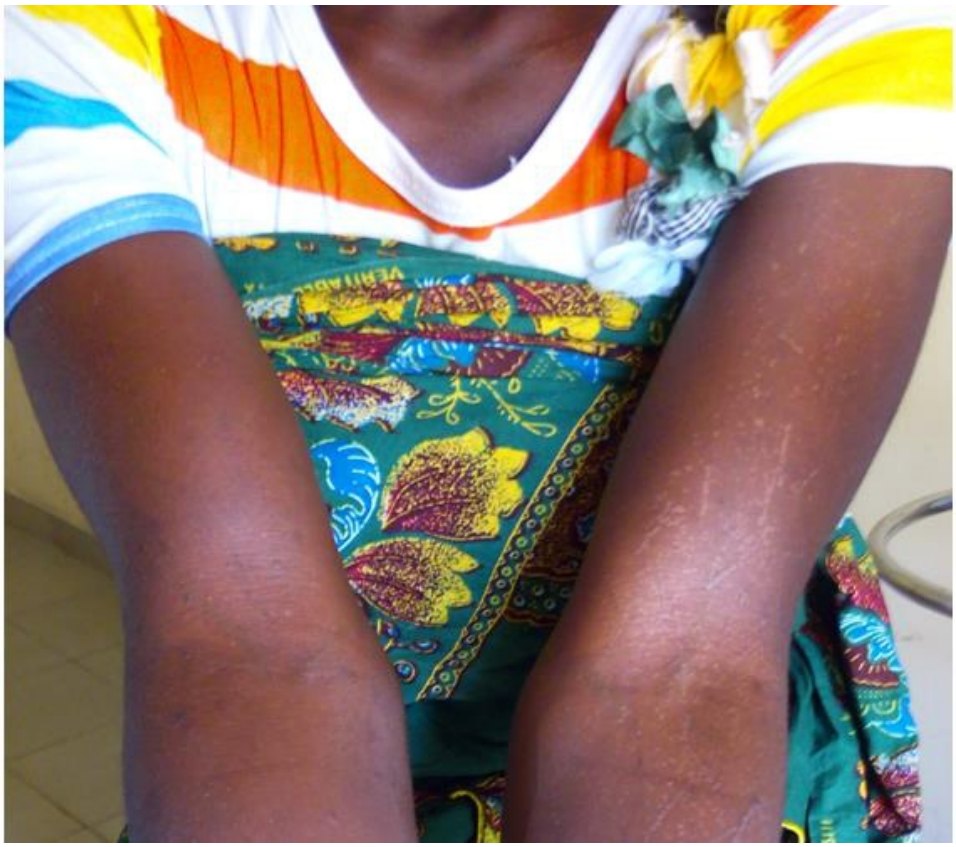

**Figure 1:** Epidermodysplasia Verruciformis-Like eruptions on the upper limbs, more prominent on the left upper limb

Immunocompromised individuals, such as HIV patients, are at risk of having the disorder9.

Histologically, acanthosis and the presence of blue cells in the spinous and granular layers in the dermis can be seen. HPV 5 and 8 are the most common virus subtypes found in lesions8. HPV causes various mucocutaneous conditions in patients with HIV infection and following HAART, there could be either paradoxical worsening or unmasking of these conditions including EVL10.

Patients with inherited Epidermodysplasia Verruciformis are predisposed to having Squamous Cell Cancer mainly in the sun-exposed areas due to Ultra-Violet radiation and sun protection is advised for patients with either the inherited or acquired or acquired form of the disease11.

EVL poses challenges in its management as there is yet no cure and variable responses are seen with the various available agents in different individuals. The various treatment options that have been used include: imiquimod, retinoids and interferon either as mono or combination therapy12. The patient discussed above was advised to wear protective clothing over her upper extremities which would perform dual functions of improving her cosmetic appearance and sun protection.

A few reports on EVL eruptions have been documented to occur among patients in South America and Europe with HIV infection after receiving HAART9,13. This is the first case report of EVL manifesting as IRIS from North-Central Nigeria. Therefore, there is need to identify and report more cases of EVL in Sub-Saharan Africa as this would intensify research for a cure and further strengthen the body of knowledge as regards EVL as a cutaneous manifestation of IRIS.

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