

## A Clinicopathologic Review of HIV/AIDS Associated Eosinophilic Folliculitis in JOS, North Central Nigeria

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### Abstract:

**Background:** Eosinophilic folliculitis (EF) is a rare non infectious eosinophilic infiltration of hair follicles. It has been classified as an AIDS-defining illness and a possible cutaneous sign of immunosuppression.

**Objective:** To determine the prevalence eosinophilic folliculitis amongst HIV/AIDS patients who were seen at the Aids Preventive Initiative in Nigeria (APIN) clinic in Jos University Teaching Hospital, Plateau State.

**Material and method:** This was a one year retrospective histopathological study of all cases of eosinophilic folliculitis amongst HIV/AIDS patients diagnosed at the Department of Pathology Jos University Teaching Hospital (JUTH), Jos. Archival records and paraffin embedded tissue blocks were retrieved, resectioned and stained.

**Results:** Overall, six (6) cases of histologically diagnose eosinophilic folliculitis were histologically diagnose within the review period. This account for 4% of all skin manifestation related to HIV diagnose in the department. Of this 6 cases, 3 (50%) were males and 3 (50%) were females given a male to female ratio of 1:1. The age range of patients were from 10-40 years, the lower limb (legs) were the commonest affected anatomical. All patients were HIV positive. 4 (60%) patients presented with a CD4+ lymphocyte count of between 200-400 cell/ul and 2 (40%) patients with a CD4+ lymphocyte count of less than 200 cell/ul and a corresponding viral load of greater than 100,000 logRNA copies/ml.

**Conclusion:** The study demonstrated that eosinophilic folliculitis is associated with HIV/AIDS, and has an inverse relationship to CD4 counts and high viral load,

the lower limbs (legs) were the commonest affected anatomic site.

**Keywords:** Eosinophilic folliculitis, HIV/AIDS, Jos, North Central Nigeria.

### 1. INTRODUCTION

Eosinophilic folliculitis is a rare non infectious eosinophilic infiltration of the hair follicle and is classified as an AIDS-defining illness.<sup>[1]</sup> Apart from immunosuppression, the spectrum of eosinophilic folliculitis has expanded to paediatric population, recipient of transplanted organs and people with haemopoietic disorders such as Leukaemia and Lymphoma.<sup>[2]</sup> Even though ES is viewed as a cutaneous sign of immunosuppression, it may also develop in immunocompetent persons.<sup>[3]</sup> ES is a common skin eruption in patients with advanced human immunodeficiency virus (HIV).<sup>[3]</sup> Non-HIV-associated EF has also been described as a rare side effect of medications like chemotherapy.<sup>[4]</sup> HIV-associated EF most commonly occurs in patients with late stage disease or low CD4 count.<sup>[5]</sup> EF has been reported in HIV-infected men, women and as well as children.<sup>[6]</sup>

EF has three variants: classic, HIV-associated and infantile EF. The first case of EF was described by Ise and Ofuji in 1965 in a Japanese woman who had recurrent follicular pustules on her face and trunk and peripheral eosinophilia.<sup>[7]</sup> The condition was later termed classic eosinophilic pustular folliculitis (EPF) also known as Ofuji's disease.<sup>[7]</sup> The trunk is the most frequent affected site, and head and neck and proximal extremities are the next commonly affected areas.<sup>[8]</sup> peripheral eosinophilic, elevated serum IgE levels, and CD4 cell counts are almost uniformly under 300/ml.<sup>[9]</sup>

Pathogenesis is not well understood but studies have favoured an autoimmune process against sebocytes and other component of sebum,<sup>[10]</sup> markers of acute inflammatory activation such as ICAM-1 and MAC 387 are strongly positive in sebocytes or some constituent of sebum acting as autoantigen.<sup>[11]</sup> A variety of microorganisms have been implicated including mite *Demodex*, the yeast *Pityrosporum* and bacteria.<sup>[12]</sup>

Immunohistochemistry shows increased expression of interleukin 4 and 5 as well as RANTES and eotaxin.<sup>[13]</sup>

## 2. MATERIAL AND METHOD

This was a one year retrospective study of histopathologically confirmed cases of eosinophilic folliculitis amongst HIV sero-positives at the Department of Pathology JUTH, Jos. between December 2014 to November 2015. The specimen consisted of punch biopsies of patients from various anatomical locations. Fresh tissue blocks were cut from paraffin embedded tissue blocks. Each reviewed and the diagnosis was made based on morphologic features.

Ethical clearance was obtained from the Ethical Committee of the Hospital before the commencement of the study.

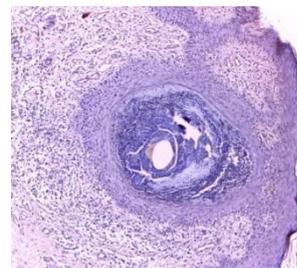
## 3. RESULTS

Overall, 150 HIV/AIDS related skin diseases were reviewed. Of these, 6(4%) cases of were eosinophilic folliculitis. 3(50%) were males and 3(50%) were females given a male to female ratio of 1:1. The age range of the patients were from 10-40years and commonest affected anatomic site was the lower limbs(legs).

4(60%)patients presented with a CD4+lymphocyte count between 200-499 cell/ul, and 2 (40%)patients with a CD4+lymphocyte count of less than 200 cell/ml and their corresponding viral load of greater than 100,000 log RNA copies/ml.



**Figure1:** Shows numerous follicular, pustular papules on the leg, the largest 2x1x0.5cm



**Figure 2:** Section show perifollicular and intrafollicular mixed inflammatory cell infiltrate with numerous intact and degranulated eosinophils.(H and Ex20magnification)

## 4. DISCUSSION

In our study, 6 cases of eosinophilic folliculitis was encountered over one year study period, accounting for 4% of all skin biopsies due to HIV/AIDS. Eosinophilic folliculitis is quite a rare disease especially in Africa and the underlined pathologic mechanism remain unknown.<sup>[1]</sup> But the disease is more common among Asian persons and Hispanic descent. <sup>[13]</sup>Studies done within and outside Nigeria has documented that eosinophilic folliculitis is a rare disorder.

Our study shows that both male and female were affected equally with a ratio of 1:1 and the lower limb(legs) was the commonest affected anatomical site with more affectation. Most cases of EF have been reported in Japan Europe and the United States of America, majority of cases are recognised in association with HIV infection with a male to female ratio of 5:1 in Japanese patients.<sup>[7]</sup> A slight female preponderance was found in the study in Taiwan(male to female ratio1:2.2) and Singapore study reported a ratio of 1:1.6<sup>[7]</sup> Male to female ratio is 1:1 in our study thus correlating with most studies as mentioned.

The extra-facial involvement of EF has also been documented. The facial involvement in the Taiwan study was 85% of cases, back and trunk 59% and the least involvement with the extremities.<sup>[7]</sup> The index study show predominant lower limb involvement in all the cases.

4(60%) patients presented with a CD4 lymphocyte count of between 200-499 cell/ul while the other 2(40%) patients presented with a CD4 lymphocyte count of less than 200 cell/ul, and their corresponding viral load in excess of 100,000logRNAcopies/ml, This confirms with studies done by Onibiyo which reported that EF which was believed to be an early sign of HIV infection occurs at CD4 T-cell counts less than 250-300 x 106/L and identifies patients at immediate risk of

developing opportunistic infection.<sup>[14]</sup> Nnoruka et al also confirmed a positive correlation between skin manifestation HIV and low CD4 count.<sup>[15]</sup>

Our results is also comparable to an earlier study in Sudan where EF is reported as a rare follicular pruritic popular eruption observed in associated with HIV/AIDS.<sup>[16]</sup> In Port Harcourt, a study done by Atraide also reported that pruritic popular eruption of HIV was the commonest skin related complication accounted for only 2.3 % cases.<sup>[17]</sup>

## 5. CONCLUSION AND RECOMMENDATION

HIV/AIDs associated eosinophilic folliculitis is a rare chronic papulovesicular disease seen in HIV infection as CD4 cell count drop below 300/ $\mu$ L and high Viral load, lower limbs (legs) are the commonest anatomical site of affectation amongs children, adult male and female.

All cases of skin lesions should be biopsied for histology and HIV screening should be mandatory for such patients.

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