



A Rare Presentation of a Non-Viremic HIV Elite Controller with Subarachnoid Hemorrhage

Mariam Alfadhli¹, Samah Almasry², Medhat El-Shazly³

¹ Consultant of Internal Medicine, Infectious Disease Hospital, Ministry of Health, Kuwait.
Email: medicine209@gmail.com; Mobile: +96599660936

² Consultant of Infectious Disease, Infectious Disease Hospital, Ministry of Health, Kuwait.
Email: dr_samehelmasry57@yahoo.com; Mobile: +96599517548

³ Prof of Public Health, Medical Research Institute, Alexandria University, Egypt.
Email: medshaz@yahoo.com; Mobile: +20106020785

ABSTRACT

This case highlights a rare clinical scenario involving an HIV-positive elite controller who presented with subarachnoid hemorrhage and underwent successful management. It also addresses important ethical and public health implications related to deportation laws in Kuwait that affect continuity of care for such patients

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*Corresponding Author

Prof. Dr. Medhat El-Shazly

Department of Biomedical Informatics & Medical Statistics, Medical Research Institute, Alexandria University, Egypt

E-mail: medshaz@yahoo.com

Mobile: +2 01060210785

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INTRODUCTION

A small subset of individuals infected with Human Immunodeficiency Virus (HIV) are able to maintain undetectable or very low plasma viral loads without antiretroviral therapy (ART). These individuals, known as elite controllers or non-viremic controllers (maintain viral loads below 50 copies/mL), typically sustain high CD4+ T cell counts and exhibit no detectable viremia on standard assays (Okulicz and Lambotte, 2011; Pereyra et.al., 2009; Dinoso et al., 2008).

Representing approximately 0.3% of the HIV-positive population, elite controllers offer valuable insights into the natural mechanisms of viral suppression. The exact immunological and genetic factors underlying this phenomenon remain incompletely understood but are thought to involve strong CD8+ T cell responses, low levels of latent reservoirs, and specific protective HLA alleles (Okulicz and Lambotte, 2011; Pereyra et al., 2009; Dinoso et al., 2008; Walker and Yu, 2013).

Studies have demonstrated that even elite controllers may exhibit persistent low-level viremia detectable by ultrasensitive assays (Pereyra et.al. 2009). Compared to individuals on suppressive ART, elite controllers show similar or even lower viral loads but may differ in immune activation profiles (Pereyra et.al., 2009). Despite their spontaneous viral control, these patients are not exempt from risks such as chronic immune activation, systemic inflammation, and an elevated incidence of non-AIDS comorbidities (Saez-Cirion and Sereti, 2020).

The decision to initiate ART in elite controllers remains controversial, as current evidence is limited and inconclusive. Some guidelines advocate for personalized management based on comorbidities and markers of inflammation.

HIV-positive patients appear to harbor increased risks of aneurysm formation and rupture particularly in the cerebral vasculature. Patients with HIV infection should be counseled regarding the potential for aneurysm formation, and concerning symptoms warrant aggressive workup (Kim et al., 2021; Grill et al., 2016; Grill et al. 2021). There is disagreement regarding the risk of aneurysm formation among HIV-positive patients; however, all reported studies have identified an increased risk of aneurysm rupture in this population (Tetens, 2021).

This case report describes a case who infected with Human Immunodeficiency Virus (HIV) presented with acute subarachnoid hemorrhage, highlighting the clinical and public health challenges of managing elite controllers in real-world settings.

CASE REPORT:

47-year-old woman from Côte d'Ivoire, diagnosed with HIV in Kuwait in 2018, was brought to the emergency department unconscious with a forehead laceration. On arrival at Adan Hospital, her Glasgow Coma Scale (GCS) was 13/15. She was intubated and transferred to the intensive care unit (ICU) for close monitoring. Her laboratory investigations were:

- CBC, LFT, RFT: Within normal limits
- VDRL, TPHA: Non-reactive / Negative
- HIV Serology: HIV antigen/antibody was reactive and HIV PCR was undetectable viral load
- CD4 count: 426 cells/ μ L
- CD4/CD8 ratio: 0.64

دولة الكويت
وزارة الصحة
المركز الطبي
التاريخ: 07/02/2018

LAB NO: 6044/H

نموذج إعادة الفحص المصيري HIV و Anti HIV
السيد الدكتور / رئيس قسم مختبرات الصحة العامة
السيد الدكتور / رئيس قسم مختبرات الصحة العامة

الاسم:	سجل العالج:	سبب الإعادة:	Anti HIV
رقم جواز السفر:	رقم الشهادة:	رقم الشهادة:	4911
مركز الفحص:	مركز الفحص:	مركز الفحص:	مركز الفحص
رقم الكشف:	رقم الكشف:	رقم الكشف:	6042

HIV Ag/Ab POSITIVE

12/2/18

Dr. Alshab Alshab

Farwaniya Hospital - Kuwait
Department No: 1120235
Accession No: 230305442

PATIENT

Age ID	Gender	Sex
2011/10/18	Female	Female

Ordered By: Dr. Alshab Alshab

VIROLOGY

Sample No: 2303200542

Test Name: HIV Ag/Ab

Result: REACTIVE

Report Note: HIV Ag/Ab is reactive, please send another sample to confirm, treating dr. Saad Mustawin informed & prev. medicine (Dr. wafan) informed.

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Computed tomography (CT) of the brain revealed bilateral diffuse subarachnoid hemorrhage. CT of the spine was unremarkable. Bedside echocardiography showed a structurally normal heart with an ejection fraction of 60%. Digital subtraction angiography (DSA) identified a right internal carotid artery (ICA) bifurcation aneurysm, which was successfully treated with coil embolization at Ibn Sina Hospital.

The patient was set under conservative treatment. After stabilization, her vital signs were within normal limits: temperature 37°C, pulse 78 bpm, and blood pressure 130/80 mmHg. General physical examination was unremarkable except for a right-sided breast mass that required further evaluation. Laboratory investigations showed normal complete blood count, liver and renal function tests. Syphilis screening (VDRL, TPHA) was negative. HIV serology confirmed reactive antigen/antibody status, with two consecutive HIV PCR tests showing an undetectable viral load. Her CD4+ T cell count was 426 cells/ μ L, with a CD4/CD8 ratio of 0.64.

The patient had been lost to follow-up since 2023. Following re-identification of her HIV status during this admission, local public health authorities initiated deportation procedures, and she was deported on 03/11/2023.

DISCUSSION:

Elite controllers are a rare subset of individuals living with HIV who maintain undetectable viral loads and stable CD4+ T cell counts without antiretroviral therapy (ART). They constitute approximately 0.3% of the HIV-positive population and are characterized by robust immune responses that limit viral replication naturally (Okulicz and Lambotte, 2011). The mechanisms behind elite control likely involve a combination of host genetic factors—such as the presence of protective HLA alleles and potent cytotoxic T-lymphocyte activity directed against conserved HIV proteins (Walker and Yu, 2013).

In this case, the patient exhibited hallmark features of elite control with undetectable viral loads confirmed by repeated PCR tests and preserved CD4 counts despite loss to follow-up. This reinforces the concept that elite controllers can sustain viral suppression in the absence of ART for prolonged periods (Saez-Cirion and Sereti, 2020). Studies have shown that such individuals may still demonstrate persistent low-level viremia on ultrasensitive assays and exhibit unique immunologic profiles when compared to individuals on ART (Pereyra et al., 2009; Dinoso et al., 2008).

However, elite control is not synonymous with an absence of clinical risk. Elevated immune activation and inflammation, even in the presence of viral suppression, may predispose these patients to non-AIDS comorbidities such as cardiovascular disease and malignancies (Chun et al., 2012). The detection of a breast mass in this patient warrants further evaluation,

given growing evidence of increased malignancy risk in elite controllers (Chun et al., 2013).

The presentation of subarachnoid hemorrhage secondary to an ICA aneurysm is likely unrelated to her HIV status or elite control, but it underscores the complexity of managing acute medical emergencies in patients with chronic infectious diseases. Additionally, the interruption of care following her deportation raises important ethical and public health concerns.

This case illustrates the ethical tension between infectious disease control policies and patient-centered care, especially in the context of elite controllers. Forced deportation of HIV-positive individuals may limit access to ART, compromise individualized treatment decisions, and raise broader human rights issues. Developing national policies that balance infection control with medical ethics and human dignity is essential, particularly as countries strive toward global HIV treatment and prevention goals.

Whether elite controllers benefit from ART remains a subject of debate. Large randomized trials such as the START study included few elite controllers and did not demonstrate clear benefits of ART initiation based on CD4 count alone in this subgroup (Lundgren et al., 2015). However, smaller observational studies suggest potential immunologic improvements with ART, including reduced T cell activation and better quality of life (Chun, 2013). Given the heterogeneity among elite controllers, personalized clinical decisions and close monitoring remain key.

In Kuwait, the management of HIV-positive individuals is shaped by legal frameworks—specifically Decree Law No. 62 of 1992, which governs the prevention of Acquired Immuno-deficiency Syndrome (AIDS). Under this law, individuals diagnosed with HIV may be subject to mandatory deportation (HIV Justice Network Kuwait, 1992). While these measures are intended to safeguard public health, they may hinder continuity of care, delay diagnosis or management of comorbidities, and disrupt follow-up for patients with complex conditions.

CONCLUSION:

This case illustrates the clinical and public health complexities surrounding elite controllers of HIV. Despite spontaneous and durable viral suppression without ART, these individuals may still face medical challenges and require careful monitoring. The presentation of a serious neurological emergency in this patient highlights the need for comprehensive, multidisciplinary care. Furthermore, policies such as deportation can disrupt continuity of care, underscoring the importance of ethical considerations in managing HIV in diverse populations. Further research is needed to define the long-term clinical benefits of ART in elite controllers and to guide individualized treatment strategies.

We believe this case offers valuable insights for clinicians, public health professionals, and policymakers, particularly in regions where legal frameworks impact HIV management. It contributes to the sparse literature on elite controllers in the Middle East.

REFERENCES

- Okulicz JF and Lambotte O (2011). Epidemiology and clinical characteristics of elite controllers. *Curr Opin HIV AIDS*. 6(3):163-168.
- Pereyra F, Palmer S, Miura T, et al. (2009). Persistent low-level viremia in HIV-1 elite controllers and relationship to immunologic parameters. *J Infect Dis*. 200(6):984-990.
- Dinso JB, Kim SY, Siliciano RF, Blankson JN (2008). A comparison of viral loads between HIV-1-infected elite suppressors and individuals who receive suppressive highly active antiretroviral therapy. *Clin Infect Dis*. 47(1):102-104.
- Walker BD and Yu XG (2013). Unravelling the mechanisms of durable control of HIV-1. *Nat Rev Immunol*. 13(7):487-498.
- Saez-Cirion A and Sereti I (2020). Immunometabolism and HIV elite control: The role of inflammation. *Curr Opin HIV AIDS*. 5(4):237-243.
- Kim TI, Hessel K, Orion KC (2021). Patient characteristics, patterns, and repair of aneurysms in human immunodeficiency virus-positive patients. *Ann Vasc Surg*. 70:393-400.
- Edwards NE, Grill MF, Choi HA, Ko NU (2016). Frequency and risk factors for cerebral arterial disease in a HIV/AIDS neuroimaging cohort. *Cerebrovasc Dis*. 41(3-4):170-176.
- Høgh J, Pham MHC, Knudsen AD (2021). HIV infection is associated with thoracic and abdominal aortic aneurysms: a prospective matched cohort study. *Eur Heart J*. 42(30):2924-2931.
- Tetens MM, Gerstoft J, Kronborg G (2022). Risk of subarachnoid haemorrhages and aneurysms in Danish people with HIV. *AIDS*. 36(9):1287-1294.
- Chun TW and Fauci AS (2012). HIV reservoirs: pathogenesis and obstacles to viral eradication and cure. *AIDS*. 26(10):1261-1268.
- Chun TW, Davey RT Jr, Engel D, et al. (2013). Effect of antiretroviral therapy on immune activation and T-cell exhaustion markers in HIV elite controllers. *PLoS Pathog*. 9(12):e1003697.
- START Study Group (2015). Initiation of antiretroviral therapy in early asymptomatic HIV infection. *N Engl J Med*. 373(9):795-807.
- HIV Justice Network Kuwait (1992). Law No. 62 of 1992 concerning the prevention of Acquired Immuno-deficiency Syndrome (AIDS). Official Gazette, State of Kuwait; 1992.

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