OPEN ACCESS Freely available online

HIV: Current Reserch

Short Communication

HIV and HSV Interactions for Co-infection Management and Public Health Strategies

John Walsh*

Department of Biotechnology, Mount Kenya University, Thika, Kenya

DESCRIPTION

The Herpes Simplex Virus (HSV) is a common viral infection that affects millions of people worldwide [1,2].

While HSV infections are usually manageable, the coexistence of HSV and Human Immunodeficiency Virus (HIV) presents different challenges. Herpes Simplex Virus (HSV) and Human Immunodeficiency Virus (HIV) has common modes of transmission and have complex interactions that can significantly impact disease progression and transmission rates. HSV infection increases the risk of acquiring HIV [3]. Genital herpes lesions provide a portal of entry for HIV leads to the viral entry in skin and mucosal barriers. HSV induced inflammation and immune activation can enhance susceptibility to HIV infection [4].

HSV reactivation and HIV disease progression

HIV infection compromises the immune system, leading to a higher frequency of HSV reactivation and more severe and prolonged outbreaks [5]. HSV reactivation can cause local inflammation and increased HIV viral shedding [6] .

Impact on individuals and public health

The coexistence of HSV and HIV has several challenges to individuals and public health:

Accelerated HIV disease progression: HSV infection can lead to increased HIV viral load and decreased CD4+ T-cell counts in co-infected individuals. This enhanced HIV replication and immune system deterioration can accelerate the progression to AIDS and increase the risk of opportunistic infections [7,8].

Diagnosis and treatment: Diagnosing HSV in the context of HIV can be challenging due to atypical presentations, frequent subclinical shedding and potential co-infection with other sexually transmitted infections. The management of co-infected individuals requires a comprehensive approach that considers both HSV and HIV treatment and prevention strategies [9].

Comprehensive management strategies

The dual challenge of HSV-HIV co-infection, comprehensive management strategies are important

Prevention and education: Promoting comprehensive sexual health education including awareness of HSV and its association with HIV acquisition, is crucial. Encouraging consistent regular testing and adherence to Antiretroviral Therapy (ART) can help reduce the risk of transmission and disease progression [10].

Early diagnosis and treatment: Early diagnosis and prompt initiation of treatment for both HSV and HIV are critical. Antiviral medications such as acyclovir, valacyclovir and famciclovir can effectively manage HSV outbreaks and reduce the frequency and severity of recurrences. Additionally, adherence to Antiretroviral Therapy (ART) is crucial to suppress HIV viral load and minimize the impact of HIV on HSV disease progression [11,12].

Prevention of transmission: To reduce the risk of HSV transmission especially among HIV-discordant couples, suppressive antiviral therapy can be considered. Daily use of antiviral medications by individuals with HSV infection can reduce the frequency of outbreaks and asymptomatic viral shedding, thus lowering the risk of transmission [13].

Integration of care: Coordinating care between HIV and HSV healthcare providers is essential to ensure comprehensive management. Integration of services including regular screening for HSV and other sexually transmitted infections can help identify and manage co-infections effectively [14].

CONCLUSION

The interaction between HSV and HIV presents a dual challenge to individuals and public health. The complex interactions between these viruses is crucial in developing comprehensive management strategies. By prioritizing prevention, early diagnosis and treatment of both HSV and HIV the risk of transmission,

Correspondence to: John Walsh, Department of Biotechnology, Mount Kenya University, Thika, Kenya, E-mail: johnw@gmail.com

Received: 11-May-2023, Manuscript No. HICR-23-25551; **Editor assigned:** 15-May-2023, PreQC No HICR-23-25551 (PQ); **Reviewed:** 29-May-2023, QC No. HICR-23-25551; **Revised:** 05-Jun-2023, Manuscript No. HICR-23-25551 (R); **Published:** 12-Jun-2023, DOI: 10.35248/2572-0805.23.8.237

Citation: Walsh J (2023) HIV and HSV Interactions for Co-infection Management and Public Health Strategies. HIV Curr Res. 13:237.

improve health outcomes and enhance the overall well-being of those living with HSV-HIV co-infection can be reduced.

REFERENCES

1. Zhu Z, Chen SS, Huang AS. Phenotypic mixing between human immunodeficiency virus and vesicular stomatitis virus or herpes simplex virus. J Acquir Immune Defic Syndr. 1990;3(3):215-219.
2. Landau NR, Page KA, Littman DR. Pseudotyping with human T-cell leukemia virus type I broadens the human immunodeficiency virus host range. J Virol. 1991; 65(1):162-169.
3. Chesebro B, Wehrly K, Maury W. Differential expression in human and mouse cells of human immunodeficiency virus pseudotyped by murine retroviruses. J Virol. 1990;64(9):4553-4557.
4. Connolly SA, Jackson JO, Jardetzky TS, Longnecker R. Fusing structure and function: a structural view of the herpesvirus entry machinery. Nat Rev Microbiol. 2011;9:369–81.
5. Reske A, Pollara G, Krummenacher C, Chain BM, Katz DR. Understanding HSV-1 entry glycoproteins. Rev Med Virol. 2007;17:205–215.
6. Shukla D, Spear PG. Herpesviruses and heparan sulfate: an intimate relationship in aid of viral entry. J Clin Investig. 2001;108:503–510.
7. Hermida-Matsumoto L, Resh MD. Localization of human immunodeficiency virus type 1 Gag and Env at the plasma membrane by confocal imaging. J Virol. 2000;74:8670–8679.
8. Nicola AV, Peng C, Lou H, Cohen GH, Eisenberg RJ. Antigenic structure of soluble herpes simplex virus (HSV) glycoprotein D correlates with inhibition of HSV infection. J Virol. 1997;71:2940–2946.
9. Bonifacino JS, Traub LM. Signals for sorting of transmembrane proteins to endosomes and lysosomes. Annu Rev Biochem. 2003;72:395–447.
10. Strick LB, Wald A, Celum C. Management of herpes simplex virus type 2 infection in HIV type 1-infected persons. Clin Infect Dis 2006;43:347–356.
11. Castelo-Soccio L, Bernardin R, Stern J, Goldstein S, Kovarik C. Successful treatment of acyclovir-resistant herpes simplex virus with intralesional cidofovir. Arch Dermatol. 2010;146:124–126.
12. Wanat K, Gormley R, Rosenbach M, Kovarik C. Intralesional cidofovir for treating extensive genital verrucous herpes simplex virus infection. JAMA Dermatol. 2013;149:881–883.
13. Yang LT, Peng H, Zhu ZL, Li G, Huang ZT, Zhao ZX, et al. Long-lived effector/central memory T-cell responses to severe acute respiratory syndrome coronavirus (SARS-CoV) S antigen in recovered SARS patients. Clin Immunol. 2006;120(2):171–8.
14. He L, Ding Y, Zhang Q, Che X, He Y, Shen H, et al. Expression of elevated levels of pro-inflammatory cytokines in SARS-CoV-infected ACE2+ cells in SARS patients: relation to the acute lung injury and pathogenesis of SARS. J Pathol. 2006;210(3):288–97.