

The Impact of HIV Drug Resistance on Vulnerable Populations: A Focus on Resource-limited Settings

Dranga Phoebe*

Department of Microbiology, Infectiology and Immunology, University of Montreal, Canada

Introduction

HIV (Human Immunodeficiency Virus) continues to be a major global health challenge, particularly in sub-Saharan Africa, Asia, and other regions with resource-limited healthcare systems. With the advent of antiretroviral therapy the prognosis for people living with HIV has improved considerably. However, the emergence of HIV drug resistance poses a significant threat to the effectiveness of ART, particularly in vulnerable populations in resource-limited settings. These populations often face multiple barriers to accessing healthcare, resulting in higher rates of treatment failure and complications, including the development of drug-resistant strains of HIV. In this article, we will explore how HIV drug resistance impacts vulnerable populations in resource-limited settings, identify the factors contributing to this issue, and discuss potential strategies for mitigating the effects of HIVDR. HIV is a virus that attacks the immune system, weakening the body's ability to fight off infections and diseases. Without treatment, HIV can progress to acquired immunodeficiency syndrome which is fatal. Antiretroviral therapy is the primary treatment for HIV, consisting of a combination of drugs that suppress the virus and prevent it from replicating. ART has revolutionized the management of HIV, enabling people with HIV to live longer, healthier lives [1,2].

Description

rescribed treatments consistently, the virus can replicate and mutate, leading to drug-resistant strains. HIV drug resistance occurs when the virus evolves and becomes less responsive to the drugs being used in treatment. This can result in treatment failure, leading to the need for alternative therapies, which may be less effective, more expensive, or harder to access. Vulnerable populations are particularly susceptible to the challenges posed by HIV drug resistance. These populations may include women, children, refugees, people living in poverty, and individuals with limited access to healthcare services. In resource-limited settings, the situation is compounded by a lack of adequate healthcare infrastructure, poor access to medical supplies, inadequate education on proper medication adherence, and the financial constraints that prevent many from accessing quality care. One of the most vulnerable groups in this context is the refugee population. Refugees often face disruption in their healthcare routines due to displacement, limited access to ART, and inadequate follow-up care. This disruption, coupled with high levels of stress and poor living conditions, increases the likelihood of ART non-adherence, making them more susceptible to HIV drug resistance [3-5].

Conclusion

HIV drug resistance is a significant threat to the effectiveness of ART, particularly in resource-limited settings where vulnerable populations face

***Address for Correspondence:** Dranga Phoebe, Department of Microbiology, Infectiology and Immunology, University of Montreal, Canada, E-mail: phoebe@gmail.com

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multiple challenges in accessing care. These populations are at greater risk of treatment failure and the development of resistant strains of HIV due to factors such as limited access to ART, poor medication adherence, and inadequate healthcare infrastructure. Addressing the issue of HIV drug resistance requires a multifaceted approach that includes improving access to ART, enhancing adherence, expanding viral load monitoring, and strengthening healthcare systems. With concerted efforts, it is possible to reduce the impact of HIV drug resistance and ensure better health outcomes for people living with HIV in resource-limited settings.

References

1. Ho, Jason, Susan Moir, Angela Malaspina and Melissa L. Howell, et al. "Two overrepresented B cell populations in HIV-infected individuals undergo apoptosis by different mechanisms." *Proc Natl Acad Sci* 103 (2006): 19436-19441.
2. Liechti, Thomas, Claus Kadelka, Dominique L. Braun and Herbert Kuster, et al. "Widespread B cell perturbations in HIV-1 infection afflict naive and marginal zone B cells." *J Exp Med* 216 (2019): 2071-2090.
3. Hart, Melanie, Alan Steel, Sally A. Clark and Graeme Moyle, et al. "Loss of discrete memory B cell subsets is associated with impaired immunization responses in HIV-1 infection and may be a risk factor for invasive pneumococcal disease." *J Immunol* 178 (2007): 8212-8220.
4. Titanji, Kehmia, Angelo De Mito, Alberto Cagigi and Rigmor Thorstensson, et al. "Loss of memory B cells impairs maintenance of long-term serologic memory during HIV-1 infection." *Blood* 108 (2006): 1580-1587.
5. Moir, Susan, Jason Ho, Angela Malaspina and Wei Wang, et al. "Evidence for HIV-associated B cell exhaustion in a dysfunctional memory B cell compartment in HIV-infected viremic individuals." *J Exp Med* 205 (2008): 1797-1805.

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