



Pediatric Human Immunodeficiency Virus Drug Resistance

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INTRODUCTION

The pandemic of the Human Immunodeficiency Virus (HIV) is still affecting the global human population. In 2021, according to predictions from the Joint United Nations Programme on HIV and AIDS (UNAIDS), there would be 38.4 million People Living with HIV (PLHIV), 1.5 million new HIV infections, and 650,000 deaths from AIDS. Between the nations of Cameroon and Gabon in West Central Africa sits the little nation of Equatorial Guinea (EG). Being one of the main causes of morbidity and death in the population, HIV/AIDS is a significant public health issue in the nation. Within its World Health Organization (WHO) area, EG has the highest worldwide HIV prevalence rate at 7.8%. Women make up over 53% of adults (over 15) with HIV, and they also have a greater HIV prevalence than men (9.4% vs. 5.2%).

DESCRIPTION

It is currently unknown how common HIV is in at-risk groups like sex workers, men who have sex with males, transgender persons, users of injectable drugs, or inmates in the nation. Heterosexual relationships are the most frequent means of HIV transmission, followed by mother-to-child transmission and blood transfusions. 8.6% of the 66,000 PLHIV in the nation are children and teenagers. Due to their early sexual activity, lack of preventative methods, and lack of understanding about HIV infection, adolescents are at a greater risk of contracting the disease. The key to HIV control is improving access to HIV diagnosis and Antiretroviral Therapy (ART), as well as putting policies in place to stop risk behaviours for disease transmission. Over the past ten years, ART has expanded at a never-before-seen rate. Globally, 28.7 million PLHIV were getting ART at the end of 2020, which decreased HIV-1 incidence and death. Through the National Plan against HIV/AIDS, the Government of the Republic of Equatorial Guinea began to regulate and put

ART into practise by the end of 2003. Diagnosis and treatment became completely free of charge, ensuring access for the whole community. However, in 2020, only 38% of adults (>15 years old) and 28% of children (0-14 years old) were getting ART, far less than UNAIDS' estimates for West and Central Africa (82% for adults and 35% for children). Additionally, there is presently no systematic clinical monitoring of Viral Load (VL) or HIV Drug Resistance (HIVDR) for ART optimization in any patient, not even those who have had therapeutic failure.

The number of people in the US who have Perinatally Acquired HIV (PHIV) is 9400. Youth with PHIV are increasingly living into their early 20s as a result of the expansion of antiretroviral therapy access over the past 20 years. AYA with PHIV today face many of the same interpersonal challenges as their peers who are not infected, but the developmentally normal duties of examining sexuality are complicated by the stigma attached to HIV and the fact that it is sexually transmitted. The impact of PHIV on teenage romantic relationships, reproductive health practises, and future intentions and aspirations for childbearing has been studied. AYA living with PHIV and its consequences on relationships and reproductive decision-making by race or ethnicity have, however, only been the subject of a small number of researches.

Despite ART's advantages, HIVDR continues to pose a serious threat to its effectiveness. The establishment and dissemination of resistance variants can be brought on by interruptions in ARV exposure brought on by lost patient follow-up, poor adherence to medication, or stock-outs impacting temporary drug supply. HIVDR can cause regimen failure, restricting options for further therapies. So long as the virus replicates in the presence of sub-therapeutic doses of Antiretroviral Drugs (ARV), periodic monitoring of Drug Resistance Mutations (DRM) is still required. The WHO advises conducting surveillance studies to determine the prevalence of transmitted (TDR) and acquired

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(ADR) DRM in populations that have not received ART (naive) or have received ART (treated), respectively.

CONCLUSION

Additionally, WHO advises pre-treatment surveillance of HIVDR (PDR) prevalence? The WHO operational definition of PDR states that it is HIVDR found in subjects who have never used ART or in those who have previously used ARVs but are now

starting first-line ART. HIVDR data can help doctors choose the best second-line ART regimen for treated patients who experience virological failure or choose the best first-ARV regimen for naive individuals. Due to a lack of funding, genotypic resistance testing has not been included into regular healthcare in the majority of low-and middle-income nations. EG does not have any surveillance studies to track HIVDR despite a high HIV prevalence, ART scale-up, and low ART adherence.