



HIV/AIDS Management: Dolutegravir Based Antiretroviral Drug Therapy

Ikpeama Osita John¹, Okoh Emeka Emmanuel², Ikpeama Chizoba Anthonia³, Ikpeama Chinwe Joy⁴,
Okafor Patrick Adimabua⁵, Igbineweka Osa Osazuwa⁶, Ikpeama Emeka Andrew⁷,
Onuzulike Nonye Mariam⁸, Hilary Tumba Gami⁹

¹.First Author & Corresponding Author Department Of Public Health, Imo State University, Owerri, Nigeria.

E-mail: ikpeama35@gmail.com Tel: +0806-261-9025,

².1Brigade Medical centre, Sokoto

³.Nursing Department Usmanudanfodiouniversity teaching Hospital Sokoto,

⁴.Medicine San Frontiers.

⁵.School of Medical Laboratory Sciences Ahmadu Bello University, Zaria, Kaduna State, Nigeria.

⁶.Department of Periodontology And Community Dentistry, University College Hospital, Ibadan.

⁷.Anatomy Department Anambra State University Uli.

⁸.Department of Public Health Imo State University, Owerri Nigeria

⁹.1Brigade Medical centre, Sokoto

Received: April 15, 2020. Revised: July 07, 2020. Accepted: September 05, 2020.

Abstract

HIV/AIDS disease still remain a global pandemic and it's management has undergone series of treatment changes and improvement although there is still no permanent cure. Dolutegravir belongs to a group of HIV drugs called integrase inhibitors. Integrase inhibitors block an HIV enzyme called integrase. By blocking integrase, integrase inhibitors prevent HIV from multiplying and can reduce the amount of HIV in the body. Dolutegravir combination based regimen has turned out to be very effective (antiviral) with negligible rare side effects on clients. This drug (Dolutegravir based regimen) combination has successfully increased the appetite for food of all the clients, unlike others and has shown to reduce viral load in the most shortest period ever. It can be deduced that development of resistant mutant virus will be reduced if not eliminated with dolutegravir based regimen. The role of Continuous adherence counseling has shown to improve clients treatment management. It is important to note that the availability of food has direct effect on the economic status or financial weight on the client. Hence the progress that is increase in body mass index (BMI) is a direct impact of the availability of food for the clients.

Keywords: HIV/AIDS, Dolutegravir, Adherence counseling, Treatment

Major classifications: Health Science

1. Introduction

The advent of Human immune virus as a public health menace and it devastating effects on every aspect of human endeavor has seriously thrown medical sciences in the cloud of finding the effective cure, although the permanent cure

has still remain a future expectation the world highly expects to see. The management of HIV/AIDS has undergone very significant changes and improvement(U.S. Food and Drug Administration (FDA) 2000).

2. Case Report

A twenty five year female presented with a history of general body pain, weakness, headache , loss of appetite and inconsistent diarrhea for a period of about three months. The client on examination was found to be of asthenic-built, apathetic, not pale, dehydrated. Her baseline weight was fifty kilogram, blood pressure 110/70mmHg and body temperature of 36.7oC, Examination of the oral cavity revealed presence of oral thrush. Body weight after two weeks was 54kilogram.

3. Laboratory Investigation

Tested positive to Human immune virus using national algorithm. The urinalysis showed protein, blood and glucose negative, Haemoglobin count 11.4g/dl, baseline viral load 1500000 copies/ml. Viral load after four week on Antiretroviral therapy 232 copies/ml.

4. Treatment

The client was giving antiretroviral daily Tenofovir/Lamuvudine/Dolitogravir 300/300/50mg once daily, was giving Nystatin 10,000IU QDS, Flagyl 400mg TID, Septrin 900mg OD and oral rehydration salt for three days.

5. Discussion

The effect of human immune virus (HIV) on the life of an individual significantly shorten the life span of its victim, especially when an individual has carried the virus for a long time without treatment. It replicate at a high rate in naïve clients. The introduction of antiretroviral therapy (ART) has significantly reduced the mortality and morbidity rate resulting from HIV/AIDS infection globally as reported by (Collier et al. 1996; D'Aquila et al. 1996; Staszewski et al. 1996).

The introduction of the newest ART drug combination Tenofovir/Lamuvudine/Dolutegravir 300/300/50mg is a great milestone in the management of HIV globally. Dolutegravir belongs to a group of HIV drugs called integrase inhibitors. Integrase inhibitors block an HIV enzyme called integrase (U.S. Food and Drug Administration (FDA) 2000). By blocking integrase, integrase inhibitors prevent HIV from multiplying and can reduce the amount of HIV in the body. HIV medicines can't cure HIV/AIDS, but taking a combination of HIV medicines (called an HIV treatment regimen) every day helps people with HIV live longer, healthier lives. HIV medicines also reduce the risk of HIV transmission (U.S. Food and Drug Administration (FDA) 2000). The effectiveness of Dolutegravir combination therapy, which has little or no difficult side effects when compare to other Antiretroviral (ARV) drug combination such as Efavirenze/Lamuvudine/Tenofovir 600/300/300mg and among other drugs (Eric and Daria 2012). The antiviral activity of dolutegravir combination therapy has surpass other drug combination in that after a month therapy the viral load was reduced to 232 copies/ml and significant increase in body mass of plus 4 kilogram after two week therapy.

The client complained that the drug increased her appetite for food by three time. The client ate heavily, for which the family members were complaining and afraid. The treatment adherence was compromising although the client pointed out that instead of taking once daily, took the drug twice a day at such the drug that was suppose to last for one month lasted for two weeks. Other clients confirmed that since they were substituted to dolutegravir based regimen, their appetite for food significantly increased although there was slow significant increase on body mass even after four to nine months on dolutegravir based therapy. There was increase in BMI among clients at stage 3 and 4 even though they all took the drug once per day. The effect of this first line (dolutegravir combination drug) could be effective in client who had failed other first line regimen therapy perhaps those on second line could do well on this regimen (dolutegravir based combination).

Continues adherence counseling in the most understanding form to clients in the care of HIV clients can never be overemphasized since it has become one of the best tools that could effectively determine what could be responsible for treatment failure. The client after counseling three month later said the excessive food intake has stopped when she took the drug once daily with no increase in body weight.

6. Conclusion

The use of dolutegravir based combination has become one great milestone in HIV/AIDS management in twenty first century. The effectiveness (viral suppression) of this first line drug (dolutegravir combination) cannot be compared to any for now except in future, although the effectiveness of continues counseling with quality nutrition will eliminate or reduce death and other complications resulting from HIV/AIDS globally.

References

- Collier, A.C., Coombs, R.W., Schoenfeld, D.A., Bassett, R.L., Timpone, J., Baruch, A., Jones, M., Facey, K., Whitacre, C., & McAuliffe, V.J. (1996). Treatment of human immunodeficiency virus infection with saquinavir, zidovudine, and zalcitabine. AIDS Clinical Trials Group. *N Engl J Med*, 334, 1011–1017
- D'Aquila, R.T., Hughes, M.D., Johnson, V.A., Fischl, M.A., Sommadossi, J.P., Liou, S.H., Timpone, J., Myers, M., Basgoz, N., Niu, M. (1996). Nevirapine, zidovudine, and didanosine compared with zidovudine and didanosine in patients with HIV-1 infection. A randomized, double-blind, placebo-controlled trial. National Institute of Allergy and Infectious Diseases AIDS Clinical Trials Group Protocol 241 Investigators. *Ann Intern Med*, 124, 1019–1030
- Eric, J. A., and Hazuda, D. J. (2012). HIV-1 Antiretroviral Drug Therapy *Cold Spring Harb Perspect Med*. 2(4), a007161. doi: 10.1101/cshperspect.a007161
- Staszewski, S., Miller, V., Rehmet, S., Stark, T., De, C.J., De, B.M., Peeters, M., Andries, K., Moeremans, M., De, R.M. (1996). Virological and immunological analysis of a triple combination pilot study with loviride, lamivudine and zidovudine in HIV-1-infected patients. *AIDS*10: F1–F7
- U.S. Food and Drug Administration (FDA) (2000). Dolutegravir dosage and effect. Retrieved May 22, 2019, from <http://www.AIDSinfo.html>