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Fixed dose combination anti-retroviral drugs had comparable immunological, virological and adherence potential with single drug combinations

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Background: There are mixed reports on the effectiveness of fixed-dose combination (FDC) anti-retroviral medications at enhancing adherence to medications. However, some countries have completely replaced the single-drug combinations (SDCs) antiretroviral medications with the FDC, which limit treatment options and promote poly-pharmacy with attendance drug-drug interactions and additive toxicities. We investigated whether the FDCs have superior adherence effects and virologic suppression over the SDCs, to warrant their exclusive retention in anti-retroviral therapy (ART) formularies.

Methods: We included 501 HIV/AIDS patients (≥18 years), prescribed FDCs and SDCs at the University of Abuja Teaching Hospital, Nigeria, over a five year period (from April 2005 to May 2010). The FDCs contained three drugs with a daily pill burden of two pills while the SDCs contained a combination of single drugs and dual fixed dose combinations with daily pill burden of eight pills. Self-reported adherence to ART was defined as taking at least 95% of medication in correct doses, frequency and schedule of administration over the previous three days. Virologic suppression was defined as achieving a HIV-1 RNA of 400 copies/mL. Propensity score method was used to make sure treatments were randomly assigned in the two cohorts and logistic regression applied to compare rates of adherence to ART and virologic suppression across the two cohorts.

Results: 501 patients were prescribed either FDC [206(41.2%)] or SDC [295(58.8%)] majority of the females compared with males were FDC users [123(48.4%) vs. 83(33.6%); $p < 0.001$]. Most of SDC users had secondary education [105(60.4%) vs. 69(39.6%)], were married [181(59.9%) vs. 121(40.1%)] and had informal employment [174(61.3%) vs. 110 (38.7%)] compared with the FDC users. Most of the FDCs users were on therapy for more than 48 months [127(64.5%) vs. 70(35.5%)] and a fewer proportion experienced adverse drug reactions [39 (44.8%) vs. 48 (55.2%)] compared with the SDC users. The proportion of SDC users who achieved virologic suppression [238(80.7%) vs. 164(79.6%)] or who were adherent to ART over the previous three days [259(87.8%) vs. 187(90.8%)] were similar when compared to the FDC users. In a multivariate logistic regression model adjusting for age, gender, education and duration on ART, viral suppression and adherence to ART over the previous 3 days were not statistically different between the SDC and FDC users [Viral suppression [(OR=0.94 (95% CI 0.54–1.45; $p=0.64$); Adherence to ART [(OR=1.37 (95% CI 0.76–2.46; $p=0.30$)]].

Conclusion: FDCs had no superior adherence and virologic suppression potential over the single drug combinations in this cohort. SDCs should be retained alongside the FDCs in resource limited settings.

Biography

Avong Y K is a Public Health Pharmacist, implementing the United States Emergency Plan for AIDS Relief and the Global Fund Round 9 grants, under the Institute of Human Virology, Nigeria (IHVN). He holds a Bachelor of Pharmacy (BPharm) from the Ahmadu Bello University, Zaria, Nigeria and a Master of Public Health (MPH) from the University of the Western Cape, South Africa. He is also pursuing a PhD in Pharmacovigilance and Pharmaco-epidemiology. He inspired the setting-up of the spontaneous reporting system (SRS) in the HIV/AIDS and MDRTB public health programs for the detection, monitoring, treatment and reporting of adverse drug reactions (ADRs) of anti-retroviral and second line anti-tuberculosis drugs. He has supervised the collection and analysis of over 2000 individual case safety reports (ICSRs) from the HIV/AIDS and MDRTB programs and published several papers in the areas of pharmacovigilance, adherence to anti-retroviral therapy (ART) and procurement and supply management (PSM) as well as reviewed manuscripts for several notable journals. He also participated in the development of the current Nigerian "Integrated National Guidelines for HIV Prevention Treatment and Care in Nigeria". As the Head of the Pharmacy Division and Associate Director with the IHVN, he oversees the delivery of pharmaceutical care services in all the grants awarded to the IHVN. He served as the Liaison Officer between the Alpha Pharmacy and Stores Limited and the Federal Government of Nigeria for the importation of Narcotics for the public sector in 2003 through 2005.

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