

Compliance with First-Line AntiRetroViral Treatment (ART) for HIV Infection in the Era of Dolutegravir in Kinshasa, Democratic Republic of the Congo

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Abstract

Context: Two years after the transition to Dolutegravir (DTG), at the national level, data on compliance with the execution of this transition and the rational use of the new molecule are not available. **Objective:** The objective of this study was to determine compliance with first-line ART prescriptions among People Living with HIV starting AntiRetroViral treatment in Kinshasa during the Dolutegravir era. **Methods:** This study is a descriptive cross-sectional study to determine compliance with first-line ART prescriptions among people living with HIV during the Dolutegravir era in Kinshasa. Sixteen Outpatients Treatment Centers (OTCs) were included in the study for their expertise in the care of PLHIV, their technical collection platform and their accessibility. The parameters of interest were: age, sex, outpatient treatment centers, and medical prescription. **Results:** One hundred and nineteen (119) patients were included in this work in accordance with the inclusion criteria; 67 (56.3%) are female, giving a sex ratio of 1.29 in favor of women. The average age of the patients included is 39.87 ± 12.36 years with extremities of 18 to 69 years. The most represented age group is that of 36 to 45 years with 37 patients (31.9%). One hundred and nineteen (119) patients were received from 16 centers in

Kinshasa, according to 6 OTC for the district of Funa, 4 OTC for Tshangu and 3 OTC respectively for Lukunga and Mont-Amba. All the centers respect the new recommendations of the National Program; all patients (100%) are on the Tenofovir (TDF) + Lamivudine (3TC) + Dolutegravir (DTG) combination. **Conclusion:** Compliance with the prescription of DTG as a first-line ARV in the DRC is effective in the city province of Kinshasa.

Keywords

ART Profile, Dolutegravir, Kinshasa

1. Introduction

AntiRetroVirals (ARVs) are molecules that are prescribed in the fight against Human Immunodeficiency Virus (HIV) infection. The objectives of AntiRetroViral Treatments (ART) are to achieve a complete reconstitution of immunity and a complete disruption of viral reproduction in a sustainable manner in the infected patient. Nowadays, there are several ARV molecules that have different targets in the life cycle of the virus. They do this specifically by preventing viral replication and, therefore, slow down the course of the infection. With the arrival of new molecules, the management of ARVs is evolving with the various recommendations of the World Health Organization (WHO) [1]. Since 2019, the Democratic Republic of Congo (DRC) has opted for the introduction of Dolutegravir (DTG) in first-line ART treatment for HIV infection [2]. Dolutegravir (DTG) is an ARV in the class of Integrase Inhibitors (II) recommended by the WHO to improve the care of People Living with HIV (PLHIV) [1].

To ensure efficacy, safety and affordability, ARVs are prescribed according to national guidelines. The National Multisectoral Program for the Fight against HIV/AIDS (PNMLS) and the National Program for the Fight against HIV/AIDS and Sexually Transmitted Infections (PNLS) publish and promulgate the laws on the care of PLHIV in the DRC [2]. These programs also monitor compliance with and application of the recommendations.

Two years after the transition to DTG, at the national level, data on compliance with the execution of this transition and the rational use of the new molecule are not available. Hence the objective of this study was to determine compliance with first-line ART prescriptions, according to the new recommendations, among People Living with HIV starting AntiRetroViral treatment in Kinshasa during the Dolutegravir era.

2. Methods

2.1. Study Design, Patient and Sample Setting

The present study is a descriptive cross-sectional study to determine compliance with first-line ART prescriptions among People Living with HIV (PLHIV) start-

ing ARV treatment in Outpatients Treatment Centers (OTCs) in the era of Dolutegravir in Kinshasa, Democratic Republic of Congo (DRC). Sixteen OTCs were included in the study for their expertise in the care of PLHIV, their technical platform, their accessibility and availability [3].

2.2. Study Population

The source population of this work was HIV-infected adults starting ART in an OTC. The inclusion criteria were as follows: being at least 18 years old at inclusion, being positive for HIV infection, naive of ART, consenting and signing consent to participate in the study.

2.3. Parameters of Interest

The parameters of interest followed for the present study were: age, sex, outpatient treatment centers, and medical prescription.

2.4. Ethical Consideration

This study had received the approval of the ethics committee of the School of Public Health, Faculty of Medicine, University of Kinshasa (ESP-UNIKIN). Authorizations to access the OTCs were obtained from each competent official of the various institutions. Prior to inclusion, fully informed consent was obtained from each patient.

3. Results

One hundred and nineteen (119) patients were included in this study in accordance with the inclusion criteria; 67 (56.3%) were female while 52 (43.7%) were male, giving a sex ratio of 1.29 in favor of women. **Figure 1** shows the above data.

The average age of the patients included was 39.87 ± 12.36 years with extremities of 18 to 69 years. The most represented age group was that of 36 to 45 years with 37 patients (31.9%); followed by that of 26 to 35 years with 24 patients (20.7%), that of 46 to 55 years with 22 patients (19.0%) and that of 18 to 25 years with 19 patients (16.4%). These data are presented in **Figure 2**.

One hundred and nineteen (119) patients were received from 16 centers in Kinshasa; 6 OTCs for the district of Funa, 4 OTCs for Tshangu and 3 OTCs respectively for Lukunga and Mont-Amba. **Table 1** presents exclusively the distribution of centers by districts.

All the centers respected the new recommendations of the National Program; all patients (100%) were on the Tenofovir (TDF) + Lamivudine (3TC) + Dolutegravir (DTG) combination.

4. Discussion

The objective of this study was to determine compliance with first-line ART prescriptions among People Living with HIV (PLHIV) starting AntiRetroViral Treatment (ART) in Kinshasa during the Dolutegravir era. One hundred and

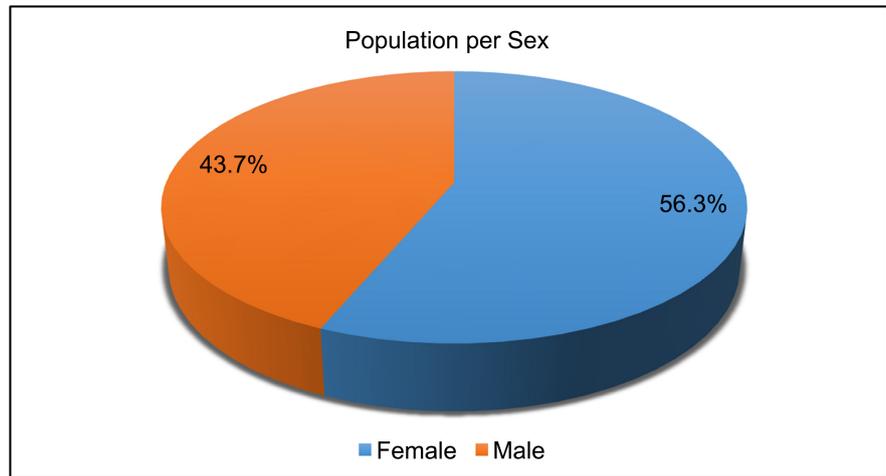


Figure 1. Distribution of the population by gender.

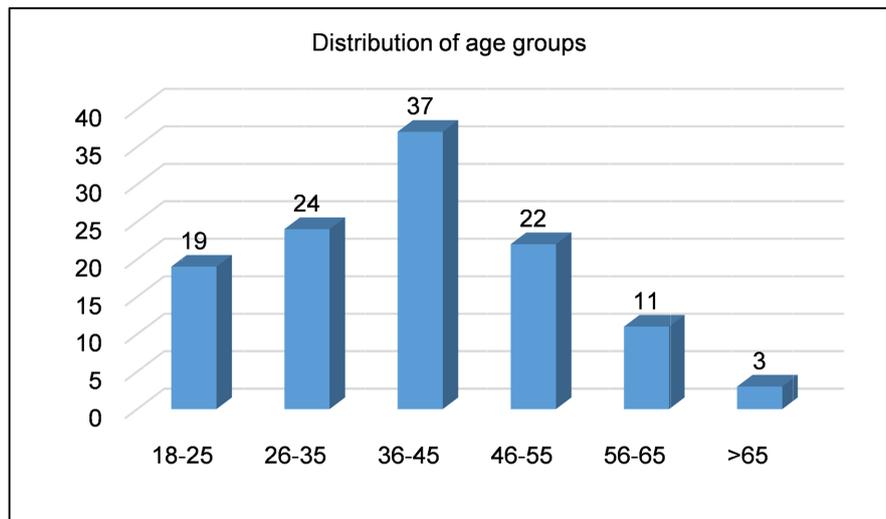


Figure 2. Distribution of age groups.

Table 1. Distribution of centers by district of Kinshasa.

District	Centers
Funa	Centre de Santé et Maternité Saint Clément, Centre de Santé Bondekoyasika, Centre Hospitalier Ngondo Maria, CMC/LNI, IST Matonge et IST Victoire
Lukunga	Centre Hospitalier Monkole, Hôpital Central Militaire de Camp Kokolo, Hôpital Central de Référence de la Police de Camp Lufungula
Mont-Amba	Centre de Santé Saint Alphonse, Centre de Santé et Maternité Mère et Enfant de Ngaba, Centre Hospitalier de Référence du Camp Kabila
Tshangu	Centre de Santé Bolingo, Centre de Santé Esengo, Centre de Santé Elonga, Centre de Santé de Référence Pilote de Masina

nineteen PLHIV were included, in accordance with the criteria, for this study initiating treatment in 16 Outpatients Treatment Centers (OTC) disseminated in the four districts of Kinshasa, Democratic Republic of Congo.

One hundred and nineteen (119) patients were included; 67 (56.3%) were female while 52 (43.7%) were male, giving a sex ratio of 1.29 in favor of women. These results showing a predominance of the female in a cohort of PLHIV are similar to the literature associated to the sex ratio presented by various studies published on PLHIV in Kinshasa in recent years [4] [5] [6].

The average age of the patients included was 39.87 ± 12.36 years with extremities of 18 to 69 years. The most represented age group was that of 36 to 45 years with 37 patients (31.9%) followed by that of 26 to 35 years with 24 patients (20.7%), that of 46 to 55 years with 22 patients (19.0%) and that of 18 to 25 years with 19 patients (16.4%). These results, which expose the age group of 36 to 45 years as dominant in the population of PLHIV, are also found in various publications for Kinshasa for recent years [4] [5].

One hundred and nineteen (119) patients were received from 16 centers in of Kinshasa, distributed as 6 OTC for the district of Funa, 4 OTC for Tshangu and 3 OTC respectively for Lukunga and Mont-Amba. The Funa district, which includes the communes of Bandalungua, Bumbu, Kalamu, Kasa-Vubu, Makala, Ngiri-Ngiri and Selembao, has the most OTCs in the city; it is more or less urban with easy accessibility in the different neighborhoods [7]. Tshangu, which includes the communes of Kimbanseke, Maluku, Masina, N'Djili and Nsele, is a predominantly rural district; it is the most populated district of the city with moderate accessibility [7]. The Lukunga district, which includes the communes of Barumbu, Gombe, Kinshasa, Kintambo, Lingwala, Mont Amba and Ngaliema, is a predominantly urban district; nevertheless the OTCs are less numerous and very reserved because of the quality of their customers. Mont-Amba, which includes the communes of Kisenso, Lemba, Limété, Matété and Ngaba, is mostly urban with moderate accessibility in the various districts [7]. **Figure 3** represents the city of Kinshasa, its districts and its communes.

All the centers respected the new recommendations of the National Program; all patients (100%) were on the Tenofovir (TDF) + Lamivudine (3TC) + Dolutegravir (DTG) combination. Since the transition to the DTG in 2019, the national programs (National Program for the Fight against HIV/AIDS and STIs-PNLS and the National Multisectoral Program for the Fight against HIV/AIDS-PNMLS) as well as their different partners have been involved in sensitization, popularization and large-scale distribution of the molecule across the country [2]. This explains the fact that the molecule was available in all OTCs and prescribed to all patients, unlike previous years when the rational use of ART for Kinshasa was not 100% respected [8].

Study Limitation

The present study was limited to some centers of Kinshasa. Therefore, generalization should be done carefully.

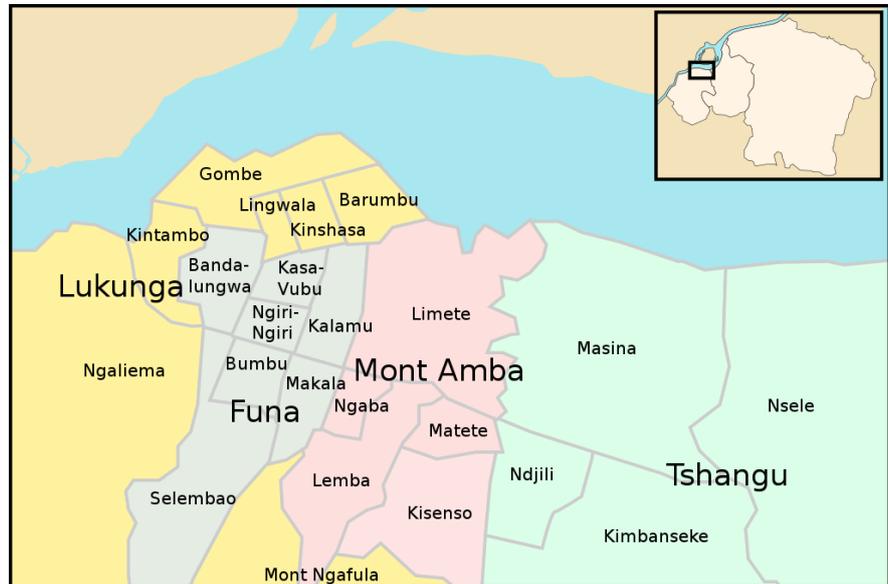


Figure 3. Representation of Kinshasa, its districts and communes.

5. Conclusion

Since the transition to Dolutegravir in 2019, national programs and their different partners have been involved on all fronts. This explains the fact that the molecule is used by 100% of patients.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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List of Abbreviations and Acronyms

ART: AntiRetroViral Treatment; **ARV:** AntiRetroViral; **CTA:** Ambulatory Treatment Center; **DRC:** Democratic Republic of Congo; **DTG:** Dolutegravir; **HIV:** Human Immunodeficiency Virus; **PLHIV:** Person Living with Human Immunodeficiency Virus.