Use of integrase strand transfer inhibitors (INSTIs) in a cohort of HIV-infected geriatric patients (GEPPO cohort).

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Background and aim of the study

We previously published data about antiretroviral therapy use in our retrospective cohort: 1222 HIV-positive patients more than 65 years old were included[1,2]. There are increasing concerns about long-term toxicity of antiretroviral treatment in elderly HIV population with a high rate of polypharmacy (PP) and multi-morbidity (MM). INSTI based regimens are an intriguing antiretroviral choice in this setting. The aim of the study is to assess the use of INSTI based regimens in a cohort of HIV-positive patients more than 65 years (GEPPO cohort) old and the INSTI prescription trends from 2015 to 2017.

Methods

Multicenter, non-interventional, observational, retrospective, single arm study of HIV geriatric patients who started, for the first time, INSTI- based regimen, from August 2015 to November 2017. We enrolled patients in antiretroviral therapy and we considered the last registered HIVRNA. Patients' characteristics were described by median (quartiles) or frequency (%).INSTI regimens were compared by Mann-Whitney test or chi-square test. Multimorbidity (MM) was defined as the presence of at least two comorbidities; polypharmacy (PP) was defined as the use of at least five drugs

Results

1526 HIV-positive patients aged more than 65 years old were included in GEPPO cohort. In Table 1 we show demographic, immunovirological, comorbidities and polypharmacy characteristics of patients treated with INSTI based regimen both in 2015 and 2017. There are no statistically significant differences between the groups. Data are available for 214 patients in 2015 and 257 patients in 2017.

Viral load was undetectable in 71.6% in 2015 vs 77.4% in 2017.

We observed 7 deaths.

In Figure 1 we show the total prescription of INSTIs. INSTI-based regimens were more commonly used in 2015 (247/1183, 20.9%) vs. 2017 (726/1526, 47.6%) $p < 0.001$. Among the INSTI-based regimens, we observed a substantial increase in DTG use (3.6% vs. 60.7% $p < 0.001$) and a decrease of RAL use (78.9% vs 30.6% $p < 0.001$). There was no change in the use of INSTI-based dual regimens (40.5% vs. 42.5% p=0.63). In 2017 the most prescribed 2 drug regimens (2DR) were DTG plus either XTC (23.1%), NNRTI (22.1%) or PI (21.1%).

In Figure 2 we show the regimen DTG-based in 2017: 55,5% were 2DR. Among these, 43,7 were 2DR with DTG and a NRTI (Figure 3)

Table 1 Characteristics of patients treated with INSTI based regimen

Baseline Characteristics	2015 (N=214)	2017 (N=217)
Males	80%	67%
Age (years)	70,5	71,7
BMI	20 (100%)	13 (100%)
Years of HIV infection	18,7	16,3
Years of ART	15,6	16
CD4 nadir (cells/µL)	177	198
CD4 (cells/µL)	564	583
Age>75 years	22,8%	28,9%
Hypertension	66,7%	69,2%
Diabetes mellitus type 2	37,2%	30,9%
Cardiovascular Diseases	24,5%	25,3%
Chronic Kidney Disease	32,4%	37,8%
Chronic obstructive pulmonary disease	11,4%	7,8%
Dislypedemia	69,3%	72,9%
Cancer	21,4%	19,5%
Chirrosis	5,5%	7%
MM	59,8%	66,9%
PP	14,3%	31,7%
ARV regimens		
1INSTI+1PI	29%	22%
1INSTI+1NNRTI	19,2%	17,1%
1INSTI+2NRTI	31,8%	31,9%

Figure 1 Total prescriptions of INSTIs based regimen in 2015 and 2017

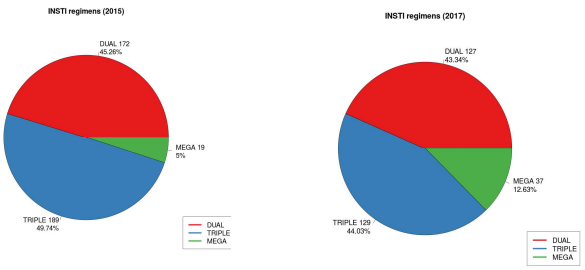


Figure 2 INSTIs regimens with dolutegravir in 2017

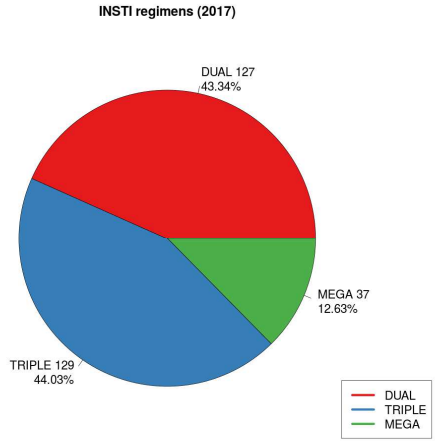
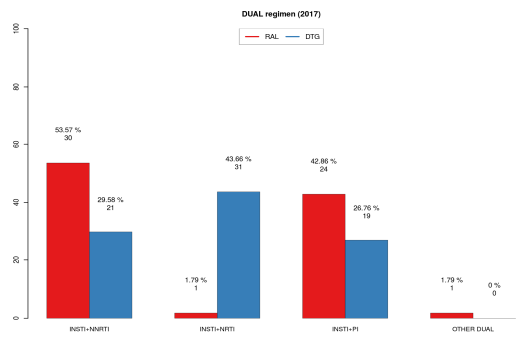


Figure 3: 2 Drug regimens (2DR) with dolutegravir in 2017



Conclusions

In last years in GEPPO cohort we observe an increase of INSTI-based less drug regimens. These data could be interpreted as a personalization of ARV in a cohort of ageing patients with comorbidities and concomitant therapies. DTG-based 2DR have high genetic barrier and could save options and toxicity in patients with long ARV experience, multimorbidities and polypharmacy.

References

1. Nozza S et al. *Antiretroviral therapy in geriatric HIV patients: the GEPPO cohort study.* J Antimicrob Chemother. 2017 Oct 1;72(10):2961
2. Guaraldi G et al. *The increasing burden and complexity of multi morbidity and polypharmacy in geriatric HIV patients: a cross sectional study of people aged 65-74 years and more than 75 years.* BMC Geriatr 2018 Apr 20; (18) 1: 99.

Acknowledgments

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