A retrospective study on the antiretroviral drug dispensing and adherence of the Hungarian HIV infected population

Halász V1, Takács P1, Tronczynski K1, Duchesne P, Kasza K, Merth G2, Merész G, Rózsa P, Sályik J4
1Janssen-Cilag, Budapest, Hungary, 2Janssen EMEA, Beerse, Belgium, 3MediConcept, Budapest, Hungary, 4St. István and St. László United Hospital, Budapest, Hungary

Background

The HEARTS (HIV Epidemiology and Antiretroviral Treatment Study) was a non-intentional retrospective claims database study. The first results of HEARTS about the epidemiology of HIV patients in Hungary were published earlier. [1] In this part of the study, we analyze the antiretroviral treatment (ART) patterns.

Methods

Objective

Our aim was to investigate the changes of ART drug dispensing over time at active substance and drug class level, to determine the therapeutic adherence of patients and examine the treatment duration of active substances as first agents of combination therapies, especially efavirenz.

Market share per active substances in prevalent, treated population

We analyzed the medical records of prevalent patients, who dispersed ARV drugs at least once between 2005 and 2015 (94.6% of prevalent patients, n=1,046). As expected, NNRTI backbone had the highest market share during the total study period (continued: 62.1% [709 patients number (n=1,065)] Treatment: 56.6% [n=582]; lamivudine+tenofovir combination: 30.4% [n=323]; lamivudine+tenofovir+efavirenz combination: 25.7% [n=283]; lamivudine+tenofovir+efavirenz+rilpivirine combination: 19.5% [n=209] and II: 15.3% [n=162]; dolutegravir: 11.7% [n=125]), respectively. Annual market share data presented in Figure 1 shows that the proportion of Darunavir and Rilpivirine usage have dramatically increased. Similarly, among the newer formulations (e.g. Raltegravir, Dolutegravir, 2 NRTI-Dolutegravir combination) we also found a significant growth during the study period.

Proportion of adherent patients

We included patients in the treatment pattern analysis if they dispersed any drug, which classified as non-NRTI at least twice between 1st July 2007 and 31st December 2015 (n=329). Based on this population we analyzed therapeutic adherence. Patients are facing the risk of treatment failure and the development of resistance mutations if their antiretroviral adherence and persistence is not optimal. According to early studies, viral suppression was only successful if the adherence was significantly high. Since then, this high level of required adherence is considered wrong by some. They say that with the improvement of regimen, it was observed that even with lower levels of adherence, viral suppression is possible. [7] In our study we found that proportion of adherent patients in Hungary assessed by the POC rate is 79.9% (n=1,065) (Figure 2).

Treatment duration of selected drug classes as a first-line treatment among adherent patients

We studied the data of adherent patients (n=1,066) to calculate the treatment duration (TtD) of most commonly used first-line drug classes (NNRTI, PI and II) and selected active substances. For the full study period, we compared the most frequently dispersed active substances of each drug class (PI: 6, Raltegravir; NNRTI: Elvitegravir – which has been marketed at the same time as DRV). Out of adherent patients, 36 dispersed a regime which contains the three above mentioned drug classes in combination, or a different drug class such as Elv/PI (Table 1).

The median treatment duration for NNRTI and PI was 7.91 years and 5.39 years, respectively. This suggests a significant difference between the treatment durations of NNRTI and PI based therapeutic strategies (p<0.001). At year 1, the proportion of patients still on treatment was 88.3% (88.1-91.4%) for NNRTI and 87.9% (86.8-88.1%) for PI, respectively. At 5 years, these values were 66.2% (61.7-71.1%) for NNRTI and 51.5% (48.2-56.9%) for PI (Table 2).

We analysed the treatment durations of Darunavir, Raltegravir and Elvitegravir as the most commonly used substances within drug classes. The median treatment duration was 4.5 years for Darunavir and 6.2 years for Elvitegravir (median has not reached for Raltegravir). The 2-year TtD was 63.1% (58.6-68.1%) for DRV, 73.9% (67.8-81.4%) for Elvitegravir and 72.6% (63.1-84.4%) for Raltegravir.

Conclusions

The present analysis is the second part of the HEARTS study, which is a the first retrospective longitudinal real-world data analysis of HIV patients in Hungary. In our study, we analyzed the drug dispensing data of 1,203 HIV patients. According to our findings, the proportion of adherent patients (POC rate) was 79.9% (n=1,065). These results show noteworthy therapeutic adherence for the Hungarian HIV population included in our analysis. The median treatment duration for NNRTI was 7.91 years and PI 5.38 years, respectively. This suggests a significant difference between the treatment durations of NNRTI and PI based therapeutic strategies (p<0.001). The 5-year TtD was 66.2% for NNRTI and 51.5% for PI.

We found considerable differences within the NNRTI drug class, namely the newer active substances, such as efavirenz (available since 2013) show better results in terms of treatment duration. Due to the development of ARV therapies and understanding their mechanism of action, we conclude that the tolerability and simplification of treatment administration could be major aspects of treatment success in real-world settings. Based on the results of our study, we conclude that the longest treatment durations can be achieved with NNRTI treatment regimens – as first-line therapies. We suggest the analysis of the subsequent use of these drug classes and active substances to be considered in the future.