

First results from a retrospective study on the epidemiology of the Hungarian HIV infected population

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Background

The National Centre for Epidemiology (NCE) provides basic information about the epidemiology of the registered HIV infected patients in Hungary, but there is no information regarding the size or characteristics of the patient population who eventually get access to healthcare services. The NCE report reflects a number of 3,116 HIV positive cases registered since 1985 by the end of 2015. Available statistics, however, do not report the prevalence of HIV infection, and do not reflect the number of infected patients died from causes other than AIDS. These limitations lead to difficulty in estimating the actual number of HIV positive patients both requiring, and accessing specialized healthcare services and treatment.

HEARTS: HIV Epidemiology and AntiRetroviral Treatment Study was designed to collect relevant data on the prevalence and incidence of HIV infection, dynamics of the HIV positive population accessing healthcare services in the real world setting, and the usage of antiretroviral therapy.

Objective

The objective of this presentation is to report, as preliminary results of the HEARTS, the main epidemiological characteristics of the HIV positive population, and the pattern of dedicated pharmacological treatment received through the public healthcare system in Hungary.

Methods

This was a non-interventional retrospective claims database study of patients registered at the National Health Insurance Fund of Hungary due to their HIV infection between 01.01.2005 and 31.12.2015. Hungary has a comprehensive public health insurance system covering the total population, and Hungarian laws grant public data access.

Sources of data

The National Health Insurance Fund Administration (NHIFA) database was accessed to collect all individual patient records associated with ICD10 codes relevant for HIV infection (B20*-B24*, F0240, Z21H0, Z7170); ICPM codes relevant for medical procedures (25568 for HIV viral load determination with molecular biological methods, 26260 for verification or confirmation of HIV antibodies); and dispensed prescriptions of antiretroviral therapies (ART).

Patient inclusion

All patients being subjected to an HIV viral load test within the predefined time period were considered as having a verified HIV infection and included in the study population. Viral load determination in the clinical practice is performed after the HIV infection is verified, therefore this inclusion method allowed us to eliminate patients who only appeared for screenings at the outpatient clinics.

Case definitions

The total number of HIV infected patients (prevalent cases) was accounted as the total number of identified HIV positive patients censored by either the patient's death or end of the observation period. Date of patients' death was derived directly from the NHIFA SSN (social security number) database.

The case definition of newly diagnosed HIV infection (incident cases) accounted for patients with the first existing viral load test in the study period after a no-test period of 24 months.

Patients who had a record of dispensed prescription of ART within the observation period were considered to have been treated in the year of dispense. ART included all types of reimbursed antiretroviral agents (i.e. nucleoside reverse transcriptase inhibitors, non-nucleoside reverse transcriptase inhibitors, protease inhibitors, integrase inhibitors, fusion inhibitors and HIV entry inhibitors) having valid Marketing Authorization in Hungary.

Results

Prevalent cases

A total number of 1,772 patients have been identified as prevalent cases throughout the period of 1.1.2005.–31.12.2015. The number of prevalent cases showed a continuous increase over time, starting from 456 patients and reaching a patient number of 1,669 in 2015.

As can be seen in Figure 1, the proportion of male patients was overwhelming in the HIV positive population, and increased slightly over time, from 84.6% in 2007 to 87.1% in 2015.

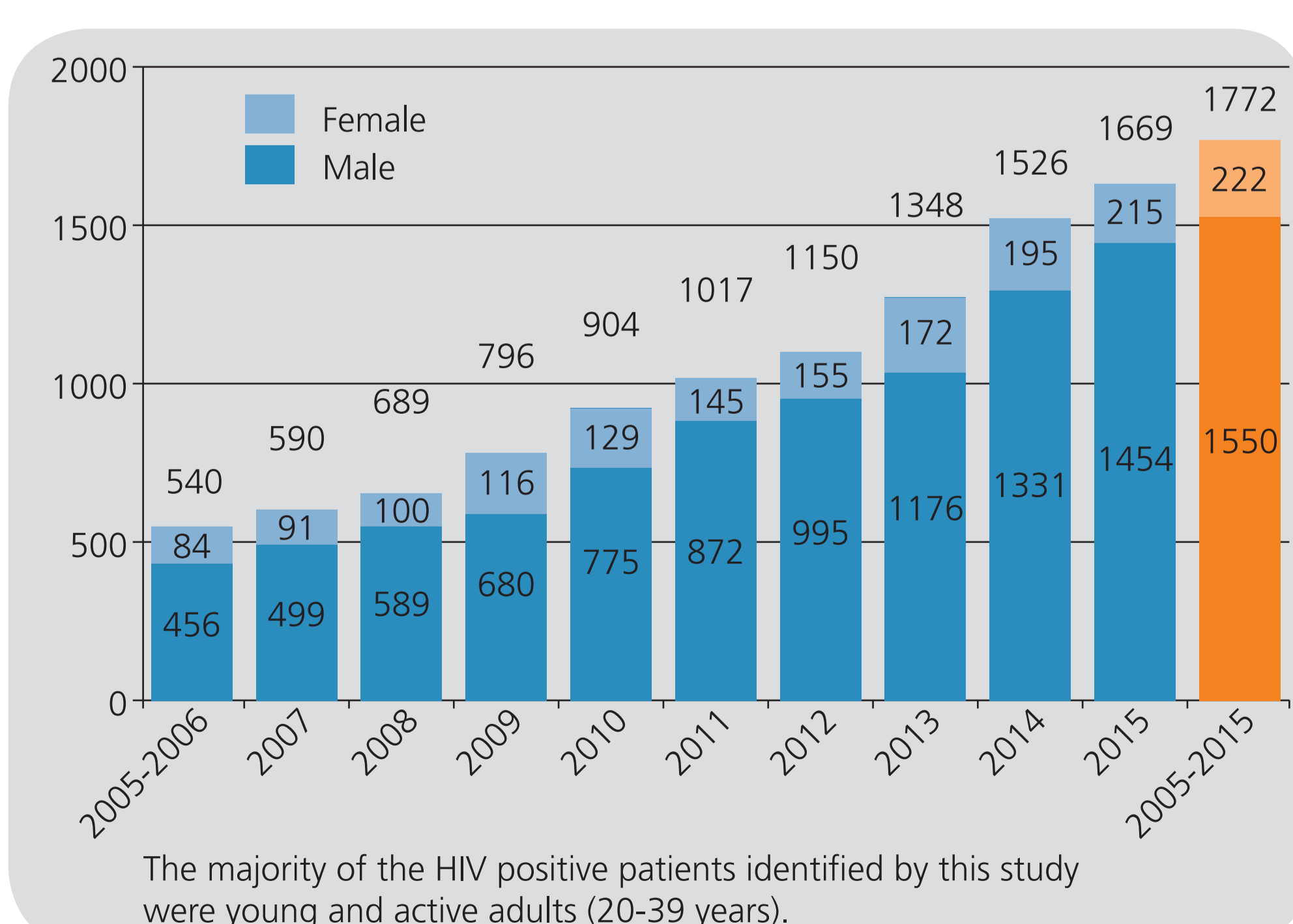


Figure 1. Evolution of the number of prevalent HIV positive cases per gender between 2005 and 2015

Incident cases

The cumulative number of incident cases between 2005 and 2015 was 1,232.

An important finding is that the newly diagnosed HIV positive cases accounted in the NHIFA database represent only a fraction of the total number of patients with HIV infection registered by the NCE. The number of HIV positive patients newly registered by the NCE and number of patients newly accessing dedicated healthcare services as apparent from the NHIFA database are presented in Figure 2.

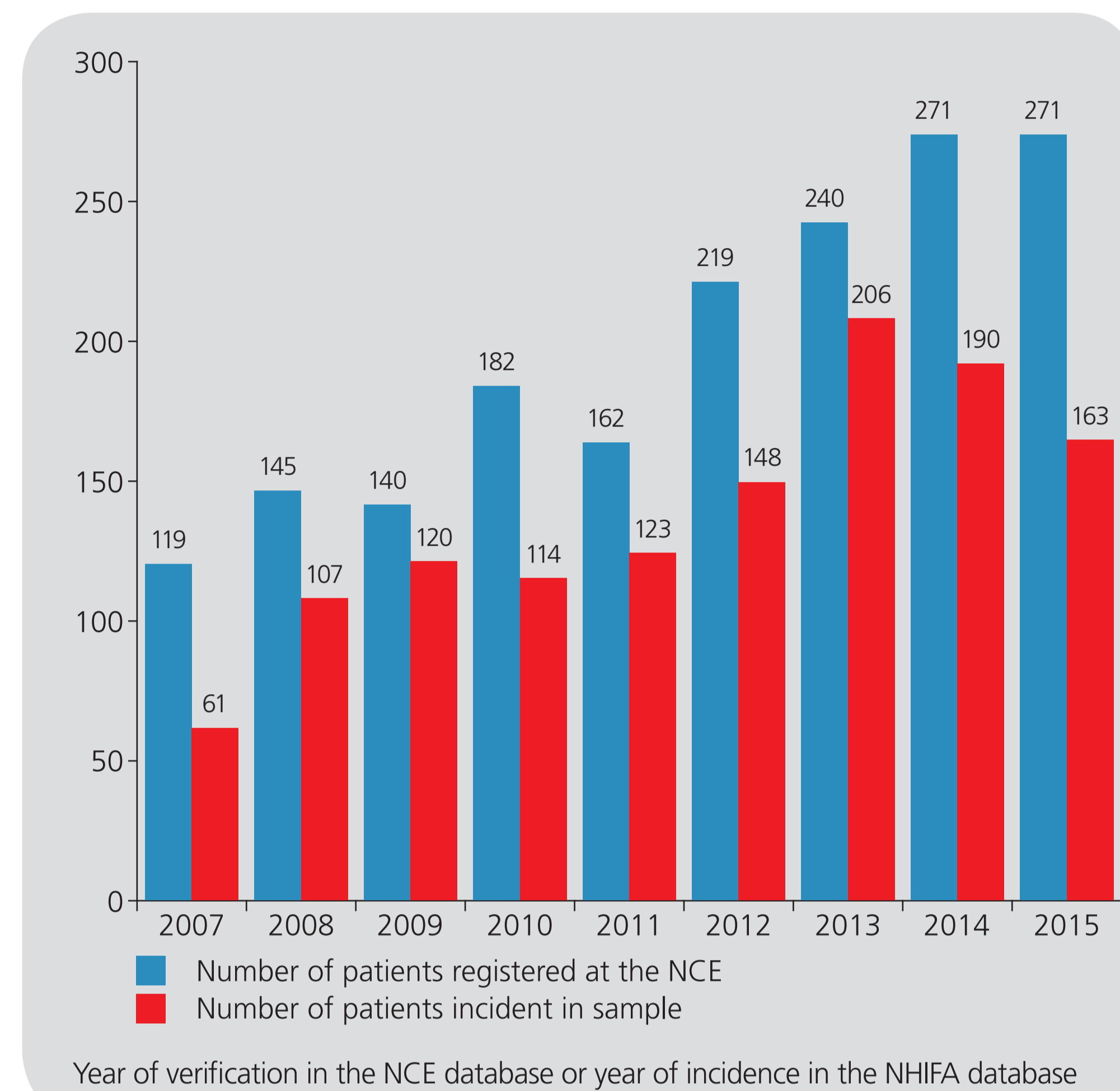


Figure 2. Number of HIV positive patients newly registered by the NCE and number of patients newly accessing dedicated healthcare services

Data on both gender and age of HIV positive patients was available since 2007. Analysis of the available dataset showed that the majority of newly diagnosed patients were males (88.6%), with the highest diagnosis rate in the age group of 30–39 years (Figure 3).

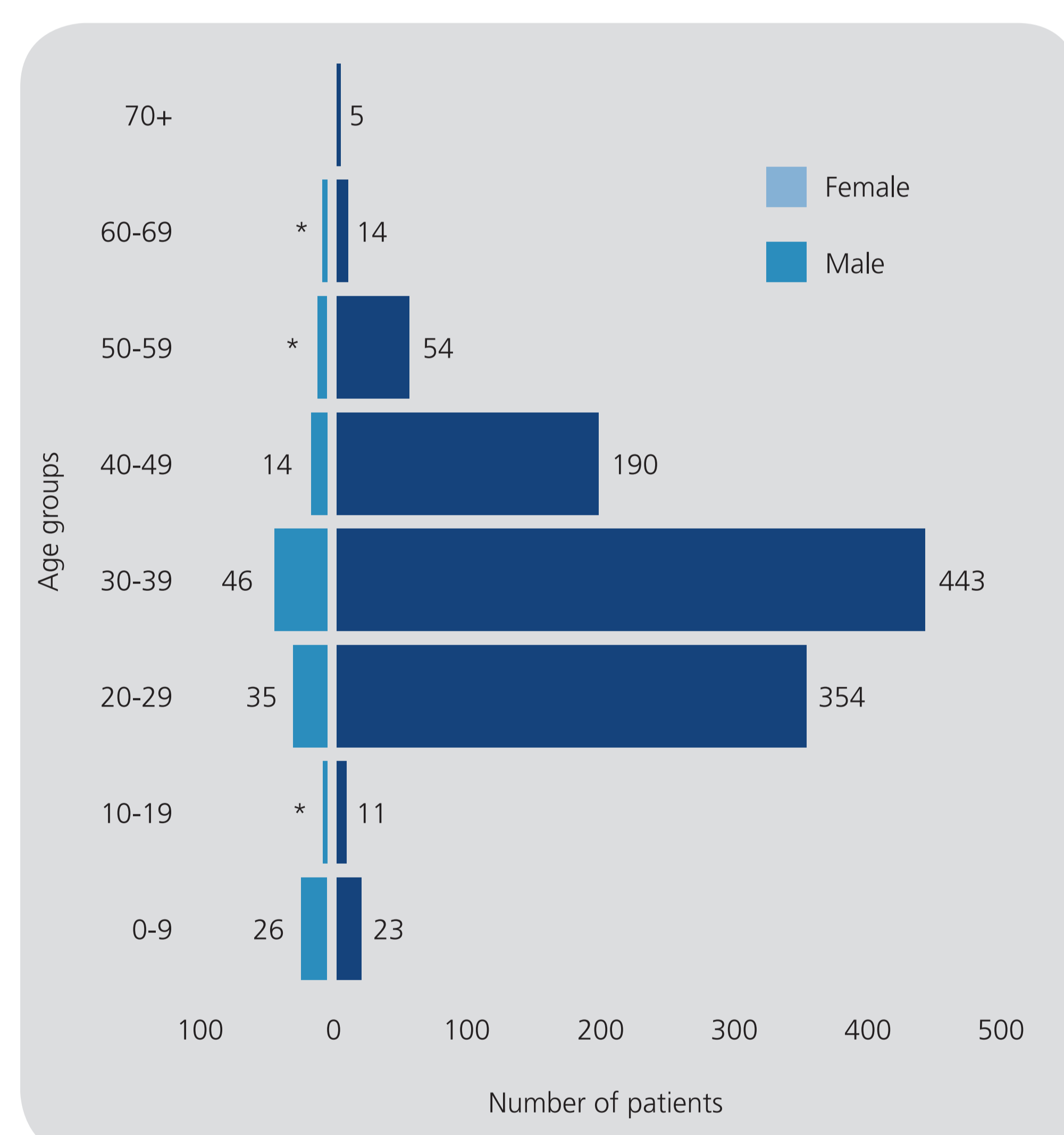


Figure 3. Distribution of newly diagnosed HIV positive patients between 2007 and 2015 per age groups and gender

Mortality

In the study period, a total of 120 patients died of the 1772 subjects 91.7% of the deceased were male, with the largest age group the 40-49 years. From data presented in Table 1 it can be seen that, when reported, the annual number of deaths amongst HIV positive patients is mostly attributable to the end-stage disease (i.e. AIDS).

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005-2015
Incident patients	-	61	107	120	114	123	148	206	190	163	-	-
Prevalent patients	475	535	590	689	796	904	1017	1150	1348	1526	1669	1772
Treated patients	N/A	362	342	429	493	557	653	728	847	1067	1291	1496
Deaths	N/A	N/A	N/A	13	N/A	10	15	N/A	12	20	17	120
Deaths due to AIDS in the NCE database	6	6	9	4	9	10	12	9	7	15	11	98

Table 1. Epidemiological characteristics of the study population

Treatment

As reflected from available data on prescriptions dispensed between 2005 and 2015, a total number of 1,496 (84.4%) of the prevalent cases received treatment. Between 2007-2015 the 80.5% of the newly diagnosed patients received ART. The vast majority (98.8%) of the treated patients received at least 1 prescription of a nucleoside reverse transcriptase inhibitor, mainly lamivudine, tenofovir or zidovudine.

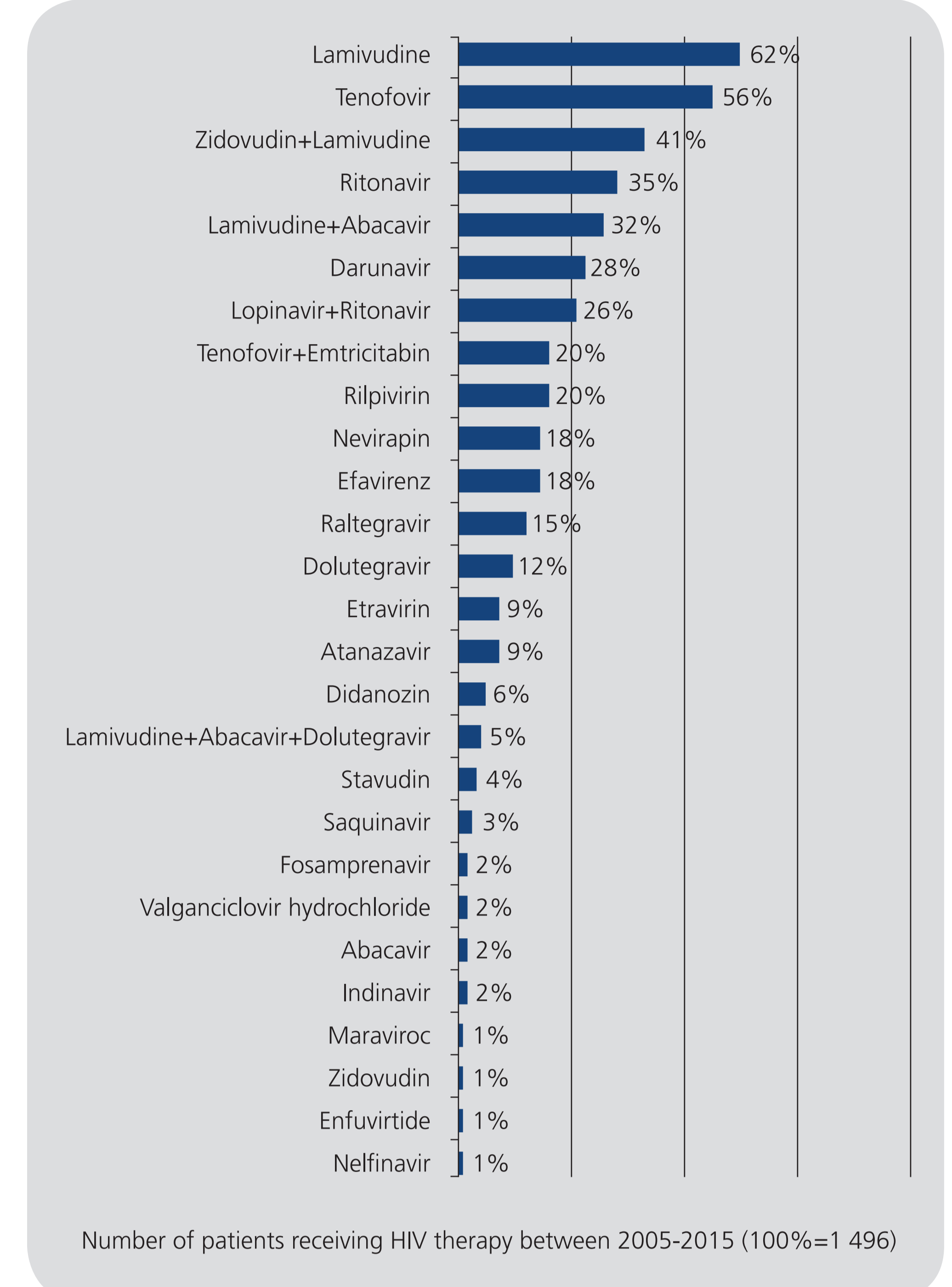


Figure 4. Cumulative utilization rates of antiretroviral agents between 2005 and 2015

Conclusions

This study has retrospectively showed that around 60% of the HIV positive patients registered by the NCE throughout 30 years of its active statistics actually benefited from health care services via the public health insurance system between 2005 and 2015. Considerable time gaps were revealed between the first registration of the HIV infection cases and access to dedicated healthcare services and antiretroviral therapies via the public healthcare system. Anonymised follow-up of patients diagnosed as HIV positive could provide valuable information about the treatment patterns and resource use of this population.

The number of prevalent cases of HIV infection showed considerable increase over the investigated time period, which is clearly attributable to newly discovered cases, and indirectly, to the effectiveness of existing antiretroviral therapies. Male patients are by far predominant amongst HIV positives, representing almost 90%. First access to healthcare resources takes place mainly at the age of 20-39 years. The number of real-world yearly deaths does not exceed extensively the number of AIDS-related deaths reported by NCE. The cumulative drug utilization pattern observed in the study population indicates the crucial role of NRTI agents, which is in line with the recommendations of the relevant therapeutic guidelines.

Limitations

Invoking institutional privacy policies, NHIFA provides cumulative statistics only for categories for comprising at least 10 cases. This publishing practice limits the available dataset on deaths in the HIV positive patient population.

Information on the treatment of the study population is somewhat limited, since drug dispensing data afferent to in-patient care are not recorded in the NHIFA database. Nevertheless, this is thought to have minimal impact on the cumulative drug utilization ratios observed in this study.

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Research protocol received ethical approval from the ETT TUKEB under registration nr. 11444-2/2016/EKU (0205/16).

The data reported here have not been presented previously.

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Potential conflict of interest

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