Background. Used in conjunction with other antiretroviral drugs, integrase strand transfer inhibitors (INSTIs) are highly effective and well-tolerated. First licensed in 2007, guidelines have recommended their use as an option for initial treatment of HIV since 2009. Here we examine factors associated with INSTI use.

Methods. Data on people living with HIV (PLWH) who were newly initiated on antiretroviral therapy (ART) was extracted from the Truven Health MarketScan data-base for commercially insured and Medicaid covered adults between January 1, 2008 and December 31, 2017. New users were identified as those without an ART claim in the 6 months preceding study inclusion. Multivariable logistic regression was pre-formed to determine factors associated with INSTI use.

Results. Between 2008 and 2015, 28,928 new initiators of ART were identified. Of those, 6,000 (23%) were initiated on INSTI-based regimens (raltegravir 47%, elvitegravir 40%, dolutegravir 13%). Fifty-three percent of initiated regimens contained non-nucleoside reverse transcriptase inhibitors and 28% included protease inhibitors. Mean age was 40.4 years (10.9). 15,382 (76%) were male. As expected, the proportion of PLWH initiated on INSTI-based regimens increased from 117 (5%) in 2008 to 53% in 2015 (n = 1,082). Those on INSTI were more likely male (OR 1.21 [95% CI 1.11, 1.31]) and not on Medicaid (1.41, [1.29, 1.54]). Although PLWH with a history of congestive cardiac failure (1.42 [1.12, 1.81]), previous stroke (1.87 [1.03, 3.38]) or renal failure (1.48 [1.12, 1.98]) were more likely to receive INSTIs, those with a history of ischemic heart disease or risk factors for cardiovascular disease including, hypertension, dyslipidemia, obesity or diabetes were not more likely to initiate INSTI-based regimens after controlling for age and year (all P < 0.05). INSTI prescribing did not differ between infectious diseases (ID) and non-ID providers.

Conclusion. Despite their good safety profile and recommendation for first-line treatment, a significant proportion of PLWH were initiated on non-INSTITI-based regimens, even in the setting of underlying comorbidities.

Disclosures. M. A. Olsen, Pfizer: Consultant and Grant Investigator, Consulting fee and Grant recipient; M. A. Olsen, Merck: Consultant and Grant Investigator, Consulting fee and Grant recipient; W. Powderly, Merck: Grant Investigator and Scientific Advisor, Grant recipient; A. H. S. E. R.: Scientific Advisor, Consulting fee.

557. Evaluation of Clinical Response of a Two Tablet Once Daily Antiretroviral Regimen in Antiretroviral Experienced HIV-Infected Patients

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Session: 60. HIV: Antiretroviral Therapy Thursday, October 4, 2018: 12:30 PM

Background. The benefits of antiretroviral therapy (ART) are compromised by virologic failure and drug resistance. To maintain virologic suppression, these patients have traditionally required multitablet “salvage” regimens. We retrospectively analyzed data to assess virologic efficacy of a two-tablet, once daily combination of Elvitegravir/Cobicistat/Emtricitabine/TAF or Darunavir (G/D) in HIV-infected adults with a history of prior resistance and regimen failure.

Methods. Electronic Medical Records of HIV-infected adults with history of prior resistance and regimen failure in our HIV-clinic were analyzed to assess efficacy of a two-tablet ART regimen of G/D. Efficacy was defined as percentage of participants with HIV-1 RNA <50 copies/mL. Statistical analysis included descriptive summary of all patients. Categorical variables (gender, mode of transmission, the presence of undetected viral load, the presence of viral load <50, class resistance number, and the presence of M184V mutation) were compared between the two outcome groups (success vs. failure) using the Fisher exact test. The two groups were also compared using Student’s two-sample t-test for normally distributed numerical variables (age and number of years from diagnosis to regimen change) and the Wilcoxon rank-sum test for non-normally distributed numerical variables (CD4 level at diagnosis and CD4 level at regimen change).

Results. Thirty-four patients were included in the study, of which 70.6% were men, majority MSM: 64.7%. Patients had been diagnosed with HIV for a median of 13.8 ± 7.3 years. More than 50% of patients at time of switch were on four pills and 53% were on a BID regimen. 61.7% patients were virologically suppressed with the regimen of G/D. There was no difference between virologic success vs. failure group when following variables were compared: CD4 at the time of regimen change, undetectable HIV VL vs. viremic patients at regimen change, the number of drug class resistance, the presence of M184V mutation. Only statistically significant variable was age, virologic failure arm patients were younger: 35.8 vs. 48.2 years.

Conclusion. Despite the small numbers of patients, our results demonstrate that in a clinical setting a two tablet regimen provides substantial efficacy in ART-switched patients harboring resistant virus.

Disclosures. 1. Brar, Gilead: Research Contractor and Speaker’s Bureau, Research grant and Speaker honorarium. Janssen: Research Contractor and Speaker’s Bureau, Research grant and Speaker honorarium. ViiV: Research Contractor, Research grant.

558. Genotype-Guided vs. Standard First-line Antiretroviral Regimen for Treatment Naïve HIV-Infected Patients in Thailand: A Prospective Randomized Controlled Trial

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Session: 60. HIV: Antiretroviral Therapy Thursday, October 4, 2018: 12:30 PM

Background. An increase in the prevalence of pretreatment drug resistance (PDR) has been reported among HIV-infected individuals and PDR may be associated with poor treatment outcome of first-line antiretroviral therapy (ART). However, drug resistance testing prior to ART initiation is not routinely performed in resource-limited settings. We aimed to evaluate the prevalence of PDR in Thailand and whether genotype-guided first-line ART can improve treatment outcomes.

Methods. A prospective, multicenter, randomized, controlled trial was conducted involving newly diagnosed HIV-infected adults. Participants who were going to initiate ART were randomly assigned to either genotype-guided (GG) group or standard of care (SC) group with 1:1 allocation per a computer generated randomization. Genotypic resistance assay was performed in all participants. The investigators in GG group were informed the results of genotypic resistance assays before selecting the ART regimen. In contrast, the results of SC group were blinded to the investigators. Factors associated with having PDR and undetectable HIV RNA were analyzed by logistic regression.

Results. A total of 153 participants were randomized to either GG group (78 participants) and SC group (75 participants). Of all, median (IQR) age was 32 (26–42) years and 83% were male. Median (IQR) CD4 count was 190 (42–324) cells/mm3. Overall prevalence of PDR was 13.7% and NNRTIs PDR was 10.5%. The most common mutation was V179D (5.9%), T215Y (3.9%) and E138K (2.0%). No associated factor of having PDR was determined. At 24 weeks, 85.9% in GG group and 86.3% in SC group had undetectable HIV RNA (P = 0.940). By univariate logistic regression, having PDR was not associated with undetectable HIV RNA (OR 0.40; 95% CI 0.12–1.30, P = 0.122). By multiple logistic regression, factors associated with undetectable HIV RNA were adherence (OR 1.53 per 5% increment; 95% CI 1.15–2.05; P = 0.004) and no history of PI (OR 6.24; 95% CI 1.62–24.08; P = 0.008).

Conclusion. In Thailand, the prevalence of PDR is moderate and NNRTIs PDR is high according to the WHO category. Recommended first-line ART for Thai HIV-infected patients should be modified. Routine genotype-guided first-line ART is not now recommended in Thailand. Periodically PDR surveillance and cost-effectiveness study of genotype-guided first-line ART should be further studied.

Disclosures. All authors: No reported disclosures.

559. Efficacy and Tolerability of Integrase Inhibitors: Experiences From a Nationwide Real-Life Cohort

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Session: 60. HIV: Antiretroviral Therapy Thursday, October 4, 2018: 12:30 PM

Background. The integrase strand transfer inhibitors (INSTIs) are widely used in first-line and alternative antiretroviral therapy. Observational studies have documented a 2–12% incidence of adverse drug reactions sometimes leading to INSTI discontinuation.

Methods. Prospectively collected cohort data of INSTI use were analyzed between January 2008 and March 2017, in Hungary, a Central-European country with centralized HIV care. Efficacy of viral suppression and reasons for discontinuation were evaluated for available INSTIs (raltegravir (RAL) and dolutegravir (DTG)).

Results. There were 2,232 patients registered in the national HIV Center in 17 March 2017. Six hundred seventeen patients received during the study period RAL (259 patients—41.9%) or DTG (358—58.1%). There were 55 cases (9%) of switch within participants) SC group (75 participants). Of all, median (IQR) age was 32 (26–42) years and 83% were male. Median (IQR) CD4 count was 190 (42–324) cells/mm3. Overall prevalence of PDR was 13.7% and NNRTIs PDR was 10.5%. The most common mutation was V179D (5.9%), T215Y (3.9%) and E138K (2.0%). No associated factor of having PDR was determined. At 24 weeks, 85.9% in GG group and 86.3% in SC group had undetectable HIV RNA (P = 0.940). By univariate logistic regression, having PDR was not associated with undetectable HIV RNA (OR 0.40; 95% CI 0.12–1.30, P = 0.122). By multiple logistic regression, factors associated with undetectable HIV RNA were adherence (OR 1.53 per 5% increment; 95% CI 1.15–2.05; P = 0.004) and no history of PI (OR 6.24; 95% CI 1.62–24.08; P = 0.008).

Conclusion. In Thailand, the prevalence of PDR is moderate and NNRTIs PDR is high according to the WHO category. Recommended first-line ART for Thai HIV-infected patients should be modified. Routine genotype-guided first-line ART is not now recommended in Thailand. Periodically PDR surveillance and cost-effectiveness study of genotype-guided first-line ART should be further studied.

Disclosures. All authors: No reported disclosures.