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ABSTRACT BOOK

HIV therapy and management

PD 58 PREDICTING 2-DRUG ANTIRETROVIRAL REGIMEN EFFICACY BY GENOTYPIC SUSCEPTIBILITY SCORE: RESULTS FROM A COHORT STUDY

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Background: HIV drug resistance has a deleterious effect on the virological outcome of antiretroviral therapy (ART). The aim of the study was to evaluate the ability of genotypic susceptibility score (GSS) to predict virological outcome following an ART switch to a 2-drug regimen in virosuppressed HIV-1 infected patients.

Material and methods: From the ARCA database we selected HIV-1 infected patients virologically suppressed switching to 2-drug ART (2006-2018, time of switch=baseline), with pre-baseline resistance genotype and at least one HIV-1 RNA determination during follow up. Primary endopoint was virological failure (VF: an HIV-RNA, VL, ≥ 200 cps/mL or 2 consecutive ≥ 50 cps/mL). Survival analysis was used to investigate predictors of VF. The GSS predicted by the latest and the cumulative genotype (CGSS) was calculated using the Stanford hivdb (v.8.5) with respect to the 2-drug regimen started. CD4 changes from baseline at weeks 24, 48 and 96 were assessed using Student's t-test for paired samples.

Results: We included 773 patients: 522 (68%) were males, 186 (24%) heterosexuals, with median age of 50 years (IQR, 43-56), 10 years of HIV (5-20), 7 years of ART (4-15) and 5 (3-8) previous antiretroviral (ARV) lines. At baseline patients had been virologically suppressed for 6.4 years (2.5-14), allowing isolated blips. The median zenith VL was 4.9 log10 (4.4-5.5), CD4 cells count at nadir 222 (108-324) and at baseline 640 (477 -860). Median GSS was 2 (1.5-2), with GSS <2 in 213 (28%) pts, median CGSS was 2 (1-2), with CGSS <2 in 250 (33%). The previous ARV classes used were NRTI in 770 patients (99%), NNRTI in 416 (54%), boosted PI in 639 (83%) and INSTI in 218 (28%). Current ARV regimens included: PI+3TC in 455 pts (59%), of which 3TC + ATV unboosted or ATV/r or ATV/c in 181 (23%) and DRV/r or DRV/c in 274 (36%), DTG+3TC in 260 (34%) and DTG+RPV in 58 (7%). During a median observation time of 75 wks (IQR 37-120) the estimated probability of VF at 48 weeks was 6% (95% CI 5-7) among patients with GSS=2, 4% (3-5) among patients with GSS 1-1.99 and 11% (4-18) among those with GSS <1 (Log Rank p=0.21). According to CGSS, the estimated probability of VF at 48 weeks was 5% (95% CI 1-6) among patients with CGSS =2, 6% (4-8) among patients with CGSS 1 -1.99 and 8% (3-13) among those with CGSS <1 (Log Rank p=0.006) (Fig 1). Observed median changes of CD4+ counts from baseline were +24 cells/μL (IQR -67;+132) at 24 weeks, +49 cells/μL (IQR -31;+159) at 48 weeks and +74 cells/μL (IQR -30;+197) at 96 weeks (p<0.001 for all comparisons). At multivariate analysis, adjusting for years of ART, CD4 cell count at nadir and at baseline, CGSS strata, number of previous ARV lines, only longer time since last VL>50 cps/mL was associated with lower risk of VF (+ 1 year, aHR 0.89, 95% CI 0.82-0.98; p=0.01).

Conclusions: Despite an effect of CGSS, the duration of virosuppression was the only independent predictor of virological efficacy of switching to 2-drug regimens.