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Poster Exhibition

Track A - Resistance in Treatment-experienced Patients

WEPE0034 - Drug resistance degree is associated with duration of ARV exposure and predicted by baseline CD4 and gender in HIV-infected patients failing first-line WHO-recommended ARV regimen: a cross-sectional viral load survey of a cohort in Cameroon (Médecins sans Frontières-Ministry of Health)

A. Soria¹, K. Porten², J.-C. Fampou Toundji³, R. Mougoutou³, J. Kfutwah Anfumbom⁴, D. Rousset⁴, R. Teck³, L. Ciaffi⁵, L. Galli¹, A. Calmy⁵, A. Lazzarin¹, N. Gianotti¹

¹San Raffaele Scientific Institute, Infectious Diseases, Milan, Italy, ²Epicentre, Geneva, Switzerland, ³Médecins sans Frontières, Yaoundé, Cameroon, ⁴Centre Pasteur du Cameroun, Yaoundé, Cameroon, ⁵Médecins sans Frontières, Geneva, Switzerland

Background: The absence of routine virologic monitoring in resource-limited settings may favor accumulation of resistance mutations, thus hampering second-line treatment efficacy. Knowing predicting factors for resistance extent could help to preserve options for future salvage regimens.

Methods: Cross-sectional viral load (VL) sampling with genotyping for VL >400 copies/mL on cameroonian HIV-infected subjects receiving ARV (nevirapine/efavirenz, stavudine/zidovudine, lamivudine) since 2001.

Results: Among 573 subjects with sampled VL, 97 (16.9%) had detectable viremia, 84 were genotyped (70% women). The mean number of reverse-transcriptase (RT) and, specifically, NRTI mutations increased per year of ARV exposure (0.33, 1.74, 2.81, 2.77 and 0.17, 0.85, 1.27, 1.77 at 1, 2, 3, >3 years; p for trend 0.03 and 0.02, respectively). Baseline CD4 counts were correlated with number of RT, NRTI and NNRTI mutations ($r=-0.35$, -0.38 , -0.23 ; $p=0.0009$, 0.0003 , 0.04 , respectively). Multivariable analysis: by GLM (covariates: age, baseline BMI, baseline CD4 \leq or $>50/\text{mm}^3$, gender, WHO stage), the adjusted mean number of RT, NRTI and NNRTI mutations was higher for subjects with baseline CD4 $\leq 50/\text{mm}^3$ vs $>50/\text{mm}^3$ (3.75 vs 1.32, 2.10 vs 0.56, 1.65 vs 0.76; $p<0.0001$, <0.0001 , 0.005 , respectively); the adjusted mean number of RT and NNRTI mutations in women vs men was 3.16 vs 1.91, $p=0.03$ and 1.60 vs 0.81, $p=0.015$, respectively. At logistic regression, being a woman was predictive of ≥ 1 NRTI mutation (OR 4.05, 95%CI 1.19-16.67); baseline CD4 $\leq 50/\text{mm}^3$ was predictive of ≥ 1 RT mutation (OR 5.36, 95%CI 1.68-20.58), ≥ 1 NRTI mutation (OR 7.49, 95%CI 2.20-32.14), ≥ 1 NNRTI mutation (OR 4.25, 95%CI 1.36-15.48), ≥ 1 TAM (OR 8.45, 95%CI 2.16-40.16), and etravirine resistance (OR 4.72, 95%CI 1.53-15.70).

Conclusions: Failing patients with baseline CD4 $\leq 50/\text{mm}^3$ are at higher risk of extensive drug-resistance, that increases over time of ARV exposure when virologic monitoring is not available. Earlier ARV initiation, and targeted VL testing, should be considered to preserve options for second-line regimens in resource-limited settings.

Presenting author email: soria.alessandro@hsr.it