

O026

2-hour Oral Session

New insights in epidemiology, resistance and pathogenesis to improve HIV management

DYNAMICS OF INTEGRATED AND TOTAL HIV1-DNA IN PATIENTS TREATED WITH A RALTEGRAVIR CONTAINING REGIMEN

F. Falasca¹, C. Montagna¹, L. Mazzuti¹, G. D'Ettorre², P. Maida¹, V. Vullo², G. Antonelli¹,
O. Turriziani¹

¹*Molecular Medicine, Sapienza University, Rome, Italy*

²*Public Health and Infectious Diseases, Sapienza University, Rome, Italy*

OBJECTIVE: In HIV-1 infected patients, antiretroviral treatment (ART) can lead to a substantial decrease in virus replication and to undetectable levels of HIV-1 RNA plasma; HIV-DNA however remain detectable in cells from most HIV-infected patients during suppressive therapy. Recent studies report a link between HIV-DNA levels and disease progression, and other studies reported that HIV-1 DNA remains stable during the first year of highly potent antiretroviral regimen in highly-experienced patients.

In order to study the dynamics of total and proviral HIV-1 DNA in ART suppressed patients, 24 subjects, switched to a Raltegravir (RAL) containing regimen were followed for 4 years.

METHODS: Study started after 6 months of RAL-treatment. Plasma and PBMC samples were collected at 6, 24, 36 and 48 months of treatment (T0,T1,T2,T3). Total and integrated HIV-1 DNA were quantified by Real time PCR (LOD: 5 and 10 copies/10⁶ cells respectively). Plasma HIV-1 RNA quantification was performed by versant kPCR (LOQ 37 copies/ml; Siemens Healthcare Diagnostic). Comparison of quantitative values were assessed by the non-parametric Mann Whitney test, and Spearman correlation using SPSS 17 Software.

RESULTS: All participants achieved undetectable levels of plasma viremia at the end of the follow up; a significant decrease of HIV-1 integrated DNA median value was detected at the end of follow up [T0=1559 copies/10⁶ cells(<10-111,113), T3=31 copies/10⁶ cells (<10-5,380), (p=0.009)]. Stable levels of total HIV-1 DNA during the follow up were found [T0=365 copies/10⁶ cells(<5-10,814), T3=339 copies/10⁶ cells(<5-6,827)]. A significant correlation between residual plasma viremia and integrated HIV-1 DNA was observed (r=0,47 p<0.05). When the HIV DNA integrated levels were stratified on the basis of residual viremia, there was a statistically significant difference (p<0.05) between subjects with undetectable viremia [median 27 copies/10⁶ cells(<10-1,364)] versus subjects with viral load <37 but detectable [median 1337 copies/10⁶cells(<10-14,617)]. No significant correlation between residual viremia and total HIV-1 DNA levels was found. No significant differences were observed when total HIV-1 DNA levels were stratified on the basis of residual viremia.

CONCLUSIONS: Proviral HIV-1 DNA levels decrease after 4 years of treatment with RAL-based regimen while total DNA remains stable. A correlation between plasma residual viremia and HIV-1 DNA integrated was found suggesting that a relationship between these two parameters does exist.