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OP 11 **Evolution of HIV-1 Transmitted Drug Resistance in Italy in the 2009-2013 Period: a Weighted Analysis**

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Abstract:

Background: Recent studies suggested that transmitted drug resistance (TDR) may be decreasing in latest years, likely because of the reducing frequency of acquired resistance. However, specific modality of infection, geographical areas and special HIV-infected populations may be disproportionally affected by TDR at present. Therefore, we investigated the temporal trends of TDR in the latest years by a weighted analysis.

Methods: We evaluated the genotypic results in 1,871 naïve patients enrolled in 23 clinical Centers of the I.Co.N.A cohort from 2008 to 2013. The Surveillance Drug Resistance Monitoring list was used to define TDR. Three time intervals (2008–2009, 2010–2011 and 2012–2013) were considered. Correlates of TDR were analyzed in a logistic regression model. A weighted analysis was performed to account for the number of patients enrolled in the I.Co.N.A cohort in each clinical Center at each time interval (total number of patients: 3,737) and of those undergoing to resistance testing. Temporal trends in TDR were studied stratifying for the size of cities (cut off: 3 millions of residents for larger metropolitan areas).

Results: Males were 81.6% of our population. MSM, heterosexuals, IDUs and others accounted for 48.0%, 39.4%, 6.8% and 5.8% of subjects, respectively. Non-Italian origin was reported in 20.0%. The 64.3% of patients was in follow up at 9 clinical Centers of large metropolitan areas. Prevalence of TDR was 10.7%. Class resistance was 6.1%, 4.0% and 2.2% for NRTIs, NNRTIs and PIs, respectively.

Non significant trends towards higher risk of TDR were observed in subjects with sexual risk factors (OR 1.517, 95% CI 0.916-2.513) and in those living in larger metropolitan areas (OR 1.370, 95% CI 0.995-1.887). No independent predictor of TDR was found in the multivariate analysis.

The weighted analysis showed an overall prevalence of TDR of 10.5% with a stable proportion over calendar years (Table). Little and fluctuating variations of class resistance were observed overtime. According to this analysis, TDR prevalence was higher in clinical Centers of larger metropolitan areas compared to those of other Italian areas (p=0.024), although the difference between these Centers decreased in more recent years. The prevalence of NRTI resistance did not significantly vary overtime in larger metropolitan areas (from 8.4% to 6.2%), while it increased from 3.0% to 7.4% in the other areas (p=0.019).

Conclusions: A stable frequency of TDR was observed in a nationwide cohort. We found opposite and converging trends of TDR prevalence in large metropolitan areas compared to the rest of the country. These different trends might be explained by the spread of resistant virus from larger to smaller cities, although this will require further evaluation by phylogenetic studies. The concern remains for sexual route of infection and larger metropolitan areas, reinforcing the need for specific prevention strategies prioritizing specific populations.