Prevalence and Predictors of HIV Drug Resistance Among US Children and Youth with Perinatal HIV

**OBJECTIVES**

- To determine the prevalence of ARV resistance among perinatally infected children and youth in AMP and to compare the prevalence of resistance by ARV class to that of national data from a commercial laboratory.
- To identify predictors and correlates of ARV resistance.

**METHODS**

The Adolescent Medicine Partnership (AMP) of the Pediatric HIV/AIDS Cohort Study is a prospective study being conducted at 14 U.S. sites. From 2007 to 2009, we enrolled 451 subjects with perinatal HIV who were 7-16 years of age at entry. We abstracted results from genotypic resistance testing performed between 2007 & 2013 (median 2010). Their median age at testing was 15.6 yrs. (range 7-16 yrs) and 68% were female. 230 of these had resistance testing results. Of the 230 subjects with resistance testing results, 170 (74%) had at least one viral load performed for clinical care. For subjects without resistance testing and viral load results, the current viral load was sent for genotypic resistance testing at a reference laboratory (Quest Diagnostics). Results were compared to the national results from the reference laboratory for 2006 and 2012.

**RESULTS**

- The 451 AMP subjects had at least one VL performed on study, 230 (51%) had at least one viral load result from 2007-2013 (median 2010). Their median age at testing was 15.6 yrs. (range 7-16 yrs). Age at ART initiation was 7.6 yrs. (range 0-15 yrs). 43% had a viral load of ≥400 copies/mL, their most recent plasma sample was sent for genotypic resistance testing at Quest Diagnostics (Table 1).
- Resistance was assessed using the Trüibetzel test for resistance at a reference laboratory.
- Correlates of resistance were assessed using the Wilcoxon Test for continuous and Chi-square Test for categorical variables.
- Correlates of resistance included:
  - Resistance to at least one ARV in a class.
  - Resistance to all ARVs in a class.
  - Resistance to at least one ARV in each class.

**CONCLUSIONS**

- Resistance is associated with more advanced disease prior to starting HAART, a longer duration of HAART, and a greater number of HAART regimens.
- Resistance to at least one ARV in a class is a known consequence of resistance to multiple ARV classes.
- The prevalence of resistance is substantially higher than that of the general U.S. HIV-infected population, perinatal HIV, including resistance to multiple ARV classes.
- Most children and youth with resistant HIV remain sensitive to newer ARVs, although a large number of children and youth with resistance to at least one ARV in a class may not benefit from salvage therapy.
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**REFERENCE**


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