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PREVALENCE OF PRIMARY HIV DRUG RESISTANCE AMONG RECENTLY INFECTED ADOLESCENTS; A MULTICENTER ADOLESCENT TRIALS NETWORK STUDY: ATN029

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BACKGROUND: Recent studies have documented an increase in the prevalence of primary HIV drug resistance among predominately white male adults with acute HIV infection in the United States. This study was designed to examine the prevalence of primary drug resistance among recently infected minority youth in the United States.

METHODS: This is a substudy of ATN 022, a multicenter study enrolling recently identified HIV-infected youth, 12 to 24 years old. All enrolled subjects had a serologic “detuned” assay, the Organon Technika Dilutional Vironostika sensitive/less sensitive test to identify individuals recently infected (within 180 days). Genotypic and phenotypic drug resistance testing (Monogram) was performed in ART-naïve patients with recent HIV infection. Major mutations conferring HIV drug resistance are defined according to the International AIDS Society-USA Drug Resistance Mutations Group.

RESULTS: From 15 different cities, 55 subjects were classified as having recent HIV infection based on the “detuned” assay and had HIV genotype and phenotype testing performed: 19 (35%) female, and 36 (65%) male; African Americans, Hispanics, whites, and other races constituted 58%, 21%, 10.5%, and 10.5% of female patients and 42%, 25%, 28% ,and 5% of male patients, respectively. The mean age was 19.7 years (range 16 to 24 years) for males and 18.6 years (range 16 to 23 years) for females ($p=0.06$). Major mutations conferring drug resistance were present in 10 patients (18%): 8 (15%) had NNRTI mutations—K103N alone (5), K103N + Y181C (1), Y181C alone (1), and V108I alone (1)—2 (4%) had NRTI mutations—M41L, L74V and T215F (1) and M184V (1)—2 (4%) had PI mutations—L90M (1), M36I and M46L (1). Evidence of phenotypic drug resistance (IC_{50} fold change > clinical or assay cutoff as defined per drug) was present in

12 (22%) patients: 10 (18%) for NNRTI, 2 (4%) for NRTI, and 3 (5.5%) for PI; 2 patients had NNRTI and 1 had PI phenotypic resistance alone; 1 patient had phenotypic resistance to NNRTI and PI; 1 patient (2%) had genotypic and phenotypic resistance to ART in all 3 classes.

CONCLUSIONS: The prevalence of primary HIV resistance, particularly to NNRTI (18%), in these recently infected youth is among the highest reported in the United States. These data support the extension of current guidelines for resistance testing in HIV-infected adults, to adolescents prior to initiating HAART.

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